A GUIDE TO SCIENTIFIC LIVING

BY

HSIEN WU

ACADEMIA SINICA

TAIPEI, TAIWAN

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1893–1959

Hsien Wu

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A BIOGRAPHICAL SKETCH

Hsien Wu was born in Foochow, Fukien, China, on November 24, 1893. He received his preliminary education at the Fukien Provincial High School. After passing the Chinese government's competitive examination for study in the United States, he spent a year of preparatory study in Peking. He was sent to the United States in 1911 and was enrolled at the Massachusetts Institute of Technology. He was graduated S. B. in chemistry in 1916 and served as an assistant in organic chemistry for one year before entering the Graduate School of Harvard University from which he received his Ph. D. in biochemistry after two years of study. His research was carried out under the supervision of Dr. Otto Folin of the Harvard Medical School, his thesis being "A System of Blood Analysis." He was co-author with his professor of a number of publications widely known as the "Folin-Wu Methods" while serving as a research fellow from 1919 to 1920.

In the fall of 1920, Hsien Wu joined the staff of the Peking Union Medical College under the auspices of China Medical Board of the Rockefeller Foundation. In 1924, he was promoted to Professor and Head of the Department of Biochemistry, and served in that capacity until January, 1942 when the P. U. M. C. was taken over by the Japanese. During the next two years of forced retirement in his Peking home, he devoted his time to study and writing; with increased awareness of the importance of political, social and economic problems, and world affairs in general, he felt keenly that the lack of a stable and orderly government had a destructive effect on all progress toward human welfare.

Early in 1944, he went to Chungking in response to the call of the Chinese government to organize its Nutrition Institute and became its first director. Later that year he was sent to the United States as nutrition expert on a special commission sponsored by the United Nations Relief and Rehabilitation Administration to study and define means of alleviating China's postwar problems. He returned to Chungking and then to Peking during the latter part of 1945. In the following year he was asked to organize the Peking Branch of the National Institute of Health, and was appointed its director, while serving concurrently as Chief of the Nutrition Institute. In 1947 he obtained a leave of absence from both posts to accept an invitation from the United Nations Economic, Scientific and Cultural Organization to serve as one of China's six delegates at the International Physiological Congress, held at Oxford, England. Subsequent political events in China prevented his return to his homeland, and he again came to the United States and commenced a new series of research in biochemistry at the College of Physicians and Surgeons of Columbia University. In 1949 he joined the faculty of the Medical College of Alabama as Visiting Professor in Biochemistry and held the post for four years. After a severe heart attack suffered in late 1952, he resigned the following year and lived in retirement in Boston, Mass. He devoted his time to the study of higher mathematics and Spanish as well as to writing. He finished the first draft of *A Guide To Scientific Living* and started on several manuscripts on the evolution of Chinese calligraphy and phonetics, and on world peace. He was greatly concerned over the fate of his own country and world affairs in general, and was an ardent advocate of world government.

Hsien Wu's researches were concerned mainly with the chemistry of blood and proteins and with nutrition. The Folin-Wu method for the determination of blood sugar benefited numerous investigators as

well as patients. His work in nutrition and on the gas and electrolyte equilibria, and his theory of the denaturation of protein remain as milestones in biochemistry. He contributed over 160 scientific papers as well as two books: *Principles of Nutrition,* the first book of its kind ever written in Chinese, and *Principles of Physical Biochemistry,* in English.

He served on the National Committee on the Standardization of Scientific Terminology, helped organize the Chinese Physiological Society in 1926 and was one-time its president. He was on the Editorial Board of the *Chinese Journal of Physiology* and the Advisory Board of *Biochimica et Biophysica Acta* for many years. He was among the first group of eighty-one prominent scholars and specialists to be elected Fellow of the Academia Sinica, having served as adviser to its Institute of Physiology in 1930. He was co-founder in 1932 of *The Independent Review,* a Chinese journal of opinion, to which he contributed a number of articles on political, social, economic, as well as popular scientific topics. He was a member of an Administrative Committee of Three, functioning as Director of the P. U. M. C. from 1935 to 1937. He served on the Standing Advisory Committee on Nutrition in 1948–49 and the Committee on Calorie Requirements in 1949–50, of the United Nations Food and Agriculture Organization.

He was married in Shanghai, China, December 20, 1924 to Tsai-yun Daisy Yen who collaborated with him in a number of biochemical investigations, and had five children: Evelyn Wan-hsien, Dorothea Wan-lien, Ray Jui, Christine Wan-ming, and Ying Victor. Hsien Wu died in Boston, Mass., August 8, 1959 and was buried in Forest Hills Cemetery, Jamaica Plain, Massachusetts.

A GUIDE TO SCIENTIFIC LIVING

How Man Can Apply Science
To Achieve Optimum Living

BY

HSIEN WU

ACADEMIA SINICA
TAIPEI, TAIWAN

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FOREWORD

Those who have studied the life and philosophy of Confucius must have observed that the Chinese sage preached rational living as well as the ideal of One World. The author of *A Guide To Scientific Living*, Dr. Hsien Wu, advocated both of the Confucian ideals. It appears to me that this is no mere coincidence, and that the author, one of China's foremost scientists, drew his main inspiration from Chinese traditional thinking as well as modern science.

Throughout his career as a scientist, Dr. Wu remained a humanist at heart. The work he did was largely concerned with human welfare. He had a strong compassion for the sufferings of his fellow men. He applied his scientific training to the betterment of their lot. Instead of being a cold science worker who views his chaotic social surroundings with a disdainful detachment, he was deeply involved in everything that occurred around him. It is not surprising, therefore, that he should devote part of the last few years of his life to the writing of this book.

To some readers, the author may appear to be an idealist whose objectives are too utopian to be attainable. I would not argue whether this is so or not. But every reader would see that with a scientist's keen observation and orderly reasoning the author treated his subject matter as if it were a laboratory experiment. Instead of merely generalizing, he listed specific methods to be employed to attain what he preached. His arguments or suggestions are all thought-provoking.

Another outstanding quality of the book is the clarity and order-

I had seen that rats were what diet made of them. But why only diet? I asked myself. How about other factors of living?

I then tried various environmental experiments with rats by placing litter-mates, on the best omnivorous diet I had constructed, in different types of cages. The results convinced me that every factor of living had its effect on the biological performance of an animal. By the same token, I reasoned, everything in man's environment would have its effect on his life and happiness. To get the most out of life, the individual must choose that way of living — the scientific way — which is most conducive to the attainment of his objective.

Turning my attention to world problems, I realized that the same scientific principle applies to the body politic no less than to the body physiologic. The relation, for example, between nutrition and individual health is analogous to the relation between economics and social health. In the former case, different nutrient substances are supplied to the body to meet the material requirements of different tissues. In the latter case, different goods and services are produced to satisfy the needs of different individuals in the society. In both, there can be either deficiency or excess of any single item; there is an optimum amount of each for maximum health and efficiency. Just as there is a balanced diet for the individual, there is a balanced economy for the society.

Furthermore, the relation between blood circulation and physical health compares well with the relation between domestic and international intercourse, commercial and cultural, and world peace. In every form of organization — be it a cell, an organ, an individual, or a nation — the interdependence of cooperative units and the division of labor among them are inescapable facts. The very essence of both

is coordination and unity. *But there is an optimum division of individual and collective function which will give maximum health at every level of biological or social integration.* World peace can be achieved in the same manner as can personal health by applying the optimum principle.

That many excellent books dealing with world peace already exist, I am aware. Indeed, nothing new can be said about peace itself. *A Guide to Scientific Living* differs in that it takes as its text the obvious premise that world peace is for the happiness of the individual, and that is where peace must begin. If this book can serve to inspire a new spirit and a new hope in individuals who feel helpless in today's world, as well as those who are in a position to effect collective improvements, it will have well justified the author's hopes and the years of anxious probing that went into it.

HSIEN WU

Boston, Massachusetts
June, 1959

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CHAPTER I

Introduction

Any one who has retired and is inclined to be retrospective will come to the conclusion that he could have done much better with his life than he has. He would have had more and better teeth if he had not neglected to brush them properly and if he had not indulged in so many sweets in his youth. His eye-sight would have been better if he had not read so much in poor light and if he had worn appropriate glasses earlier. His general health would have been better if he had taken regular physical exercises and annual vacations in spite of the pressure of business or profession. He would have made more friends and fewer enemies if he had been more prudent in his remarks about others. He would have been better off financially if he had been more careful in his spending and less reckless in his investments. He would have enjoyed more domestic bliss if he had acquainted himself with the physiology and psychology of married life. He would have brought up his children more properly if he had done some reading and thinking about child care and education. He could have done better in almost everything than he has. In short, he could have got much more out of life if he had known better. As a matter of fact, one does not need to wait until retirement to look back. The sooner he considers these questions, the more benefit he will derive from the reflection. Truly, life is what each person makes of it.

Life evolves within the framework of heredity and environment. Heredity sets the limit of one's potentiality. Environment sets the limit of one's possibility within that potentiality. But the actual course

of development depends on how one lives his life. Neither natural endowment nor fortunate circumstance will be of any avail unless one knows how to take advantage of his opportunities.

Today, the United States of America is the richest country in the world. Americans enjoy the highest standard of living the world has ever known. There is abundant opportunity for all to earn an honorable and decent living. There is the protection of social security and unemployment compensation. Medical facilities and sanitary conditions are excellent. Life expectancy has been steadily increasing in the last fifty years. Yet with all these favorable circumstances, are the people happier, and do they really accomplish more in life than people in other countries not half as well off?

Opportunity for education is excellent in America. Primary education is compulsory and free. There are more colleges and universities per million population than anywhere else. Scholarships and fellowships are numerous and one can easily work one's way through college, if necessary. The unparalleled opportunity for education combined with the high standard of living should make the Americans the most cultured people in the world. True, America has her top-notch scientists, philosophers, artists, and scholars who rank high among their colleagues in the world. But the cultural level of the nation as measured by that of the man in the street is disappointing. He is always looking for pleasure but never seems to find it. He wants a new car with more frills and frivolities every year if he can afford it. He drives with excessive speed, without any reason for hurry. He does little serious reading, if any. He spends his leisure hours watching television, devouring shows of crime and nonsense. He is crazy about ball games or prize fights but he is a stranger to fine arts and literature. In short, his intellectual and artistic capabi-

lities remain underdeveloped and he may not be as happy in 1959 as his grandfather was in 1900.

If we are not making the most of our lives in our individual living, we are worse off in our cooperative living.

The family is the foundation of society but today it has become a fragile institution in some countries. Churchmen and sociologists are alarmed by the prevalence of divorce and juvenile delinquency. The causes are probably many but the chief reasons are undoubtedly that young people do not give enough thought to their actions and that the parents do not know how to bring up their children, or simply neglect them.

On the local and national levels, corruption and inefficiency are as common today as they ever were. Dictatorship is rampant in spite of the republican form of government. Imperialism still exists in spite of lip service to self-determination.

If each nation is not making the best of her opportunities, the world as a whole is doing even worse. Instead of benefiting from free cooperation between all the peoples of the world, men are divided into conflicting groups by race, religion, ideology, and above all, by nationality.

Nationality limits the freedom of travel and residence as well as the freedom of cultural and economic exchange. These limitations prevent the full development of human and material resources everywhere and the maximum total production for the world. What is worse, the world is divided into two opposite camps, one dedicated to the downfall of the other, and a third group of the so-called non-

committed nations, quarreling more or less among themselves. As a result, the major portion of the national income of many nations is devoted to armament. Not only is there a tremendous waste of human energy and material resources but all are trembling in fear of a nuclear war which may well destroy our civilization, if not exterminate the human race. If the peoples of the world realize the senselessness and futility of war and turn a new leaf in international relations, the political climate of the world will immediately change for the better.

To err is human. We err right and left as we go through life. Some errors are slight; others are grave. Some make little difference; others have serious consequences. Those who make few or slight errors are the ones who are relatively successful in their lives. However, all of us *can* live a healthier and happier life and the world *can* be a much better place to live in, if we endeavor to reduce the errors to the minimum. This we can accomplish through scientific living, that is, by living one's life according to the physical, biological, and sociological principles which can be formulated by applying scientific methods.

CHAPTER II

We Can Live Better by Applying Science

We can live much longer and better than we do. We can achieve much more in life. We can be healthier in body and mind. We can live a more satisfying life.

There need never be another war.
There need never be another depression.
There need never be unemployment or labor strife.
There need never be poverty, ravaging epidemics, ignorance, or human misery in any corner of the globe.

We have only to put to work the same magic — science — which we have used to transform our physical environment and are now using to make bigger and better bombs. The methods that solve problems of physics, agriculture, manufacturing, and engineering can also solve problems of daily living, human relations, and world peace.

With the aid of science, we can build a world in which businessmen can look forward with certainty to selling their products; wage-earners can know exactly what they will receive for their labor in terms of real wages; production losses due to industrial warfare will be eliminated; there will be no more booms or busts, and production can be maintained at a specified level.

Man has reached the fork in the long evolutionary road. For ages his progress was perfunctory. He was shoved along together with plant and animal life. For the first time, he not only can, but

must, consciously direct his own evolution with scientific methods. He can no longer leave it to chance. If he rejects the challenge, he may find himself in an atom-scarred remnant of what was once a promising world. If he accepts, a new era of peace and prosperity will begin.

What is science?

Science is not a system of thought or ideology. A dictionary definition of science is: "Knowledge of facts, laws, and causes, gained and verified by exact observation and correct thinking; also, a source of universal knowledge."

Science, therefore, is applicable to everything in nature which can be observed objectively — that is to say, perceived through the senses. Man reacts to the stimuli in his environment according to definite laws. His reactions can be observed, charted, and laws deduced. All his problems of living, from marriage to industrial harmony, from personal care to world peace, will be improved when these laws are discovered and applied.

Modern science really dates back only about three hundred years, when the experimental method began to be employed in earnest. In the past one hundred years alone, science in many diversified fields has made more progress than during the entire period of human existence.

Though it may seem like magic, there is really nothing esoteric about the aims and methods of science that the layman cannot comprehend. Its object is to turn the searchlight on nature, to discover laws. These laws tell us that if we do certain things in a certain way, we will get certain results. A law is a constant cause-and-effect relation between the same factors in a phenomenon in any context of

time and space. In other words, the phenomenon is lifted out of its particular context and made into a generalization.

The scientific method

The scientific method is as unchangeable as nature itself. Whatever the problem, the method is the same. The only difference between social phenomena and physical and biological phenomena is one of degree — degree of complexity — not of kind.

Some problems can be solved only by observation of naturally occurring phenomena, as in astronomy, geology, and meteorology. In physical and biological sciences, we are not always obliged to await nature's revelations; often we can artificially produce the phenomena we want to observe. This is called the "experimental method" — the most powerful method for the discovery of facts.

The experimental method is particularly valuable when the naturally occurring phenomenon is too complicated, or when the factors which we want to study are not accessible in nature. The only difference between a phenomenon occurring naturally and one produced artificially is that, in the latter case, we isolate the factors precisely according to our wish. However, the method of establishing a factual relationship remains the same whether the phenomenon is natural or produced experimentally.

There are four major steps in the scientific method. They are:

1. *Isolation of those factors the relation between which we want to discover.*

This is done through the elimination or control of all other factors. Let us say we want to learn the relation between sunlight and

the growth of a geranium plant. We set up an experiment in which only sunlight is varied while all the other factors such as temperature, composition of air and of soil, amount of water, etc., are kept constant. In this way the factor, sunlight, which we are testing, is isolated from the other factors, and the growth of the geranium, under the circumstances of the experiment, is solely related to the amount of sunlight it receives.

2. *Setting up a "control."*

In testing the effect of one factor on another in any experiment, it is often necessary to set up a second experiment in which the factor we are interested in is either absent or kept constant. This experiment is called a "control." As control for the geranium plant exposed to sunlight, we must have an identical plant kept in the dark. We can only attribute to sunlight the difference in growth between the two plants.

3. *Repetition of observation.*

A single observation does not enable us to draw a generalization because it may be in error or by accident. Observation must be repeated and the results must agree. The exact conditions of the experiment should be specified to enable accurate reproduction either by the experimenter or by any other person.

4. *Statistical analysis.*

When the factors under scrutiny are completely isolated from others, the observed relation between them should be constant except for variation on the part of the observer. If no variations occurred among experiments, conclusions could be drawn without statistical analysis. Otherwise, the average of a number of observations, and the probable error of this average must be determined by statistical

analysis.

The object of science (the discovery of the relationship between factors in a phenomenon) and the method of science (the four steps outlined above) *are the same whether the phenomenon be physical, biological, or sociological.*

Why the lag in the social sciences?

We can understand the backwardness of the social sciences when we consider the perfectly natural fact that science began with the simplest phenomena and erected its present intricate structure of knowledge on that broad base. The sciences developed in the order of their complexity: mathematics dealing with *number*; physics with number and *matter;* biology with number, matter, and *life;* and finally, sociology with number, matter, life and *human relations.*

Moving from physical to biological and from biological to social phenomena, the degree of complexity (the number of factors) increases. With increasing number of factors go increasing difficulty of isolation (and experimentation), increasing need of control, increasing need of repetition and of statistical analysis.

We need exact laws in all areas of living, individual and collective. Establishing the groundwork for social sciences will be a long, tedious, painstaking process. While involving essentially the same procedures which physical and biological scientists have used so successfully, it demands more observations and more caution in testing hypotheses and drawing conclusions.

However, if we are to live better, the exact laws of social sciences must be formulated and put into practice.

CHAPTER III

Goals

Human beings, like other living things, and indeed all systems or aggregates of matter, are endowed by nature with certain properties which determine the way they act and react. These properties are called properties of matter in non-living things; they are called human nature in man.

It is human nature, as indeed the nature of all living things, to behave in such a way as, in the long run or on the average, to preserve the life of the individual and to propagate the species. However, the preservation of life and the propagation of the species are goals which the philosopher reads into the behavior of living things. Living things themselves, even human beings, are usually unaware of these distant consequences of their acts. Indeed, these distant consequences rarely, if ever, motivate human action directly. *The driving force,* of which one is aware, *behind the action is always the enjoyment or satisfaction which the action is expected to bring.*

We do not know exactly what satisfaction consists of, in physiological and physico-chemical terms, but there is no doubt that it is a state of the body and the mind. The state of satisfaction may have a short or long duration. When it is sustained, it is called the state of happiness.

Happiness has two dimensions: *duration and intensity.* Surely one wants not only satisfaction of the moment or of today but also of tomorrow and all the rest of one's lifetime. And at any moment,

there are gradations or degrees of happiness. If the degree of happiness as well as the duration could be measured, the product of the two would be the "amount of happiness" for a definite interval of time. The amount of happiness enjoyed during the whole lifetime constitutes the total happiness of one's life.

Obviously, the maximum total happiness in one's lifetime is the supreme objective of living. It is the ultimate goal.

There are countless formulae for getting maximum happiness. Some rely on common sense, some on logical reasoning, some on prayer, or on intuition. Any of them might work some of the time, but there is one formula which works every time. It is: *Know your own mind and then apply science.*

Note that science is secondary; it applies only to *ways* of doing things, not to *what* should be done. It is up to everyone to plan carefully and to select his goals wisely. Once the goal is fixed, then scientific methods can be applied for its attainment. Actually, selection of one's goals has its scientific basis; knowledge of facts, laws, and causes is essential to planning realistically and intelligently.

One of the best things about planning is the wonderful psychological lift it confers — the knowledge that we can be masters, not slaves, of our destiny within our given limitations of heredity and environment. The instant we accept the proposition that our goal is the maximum total satisfaction in the lifetime, our personal horizon expands. Many things impossible of immediate achievement become possible when projected into the future. We cease to live from moment to moment or from day to day; instead, we fix our sights on a worthy goal toward which we can move with confidence. The long

view, we now see, is also the wide view; success depends on the breadth of our vision, no less than on our willingness and ability to be realistic in facing up to facts. What do we want? We can spell it out, see whether it is practicable, formulate our problem and then *plan.*

Goals of different order — A goal may be immediate, intermediate, or ultimate. For example, on a journey, the immediate goal is the next station, the ultimate goal is the final destination, while the intermediate goals are the stations in between. The goal which is next to the ultimate may be called primary, the next, secondary, the next, tertiary, and so forth.

Happiness is the ultimate goal of man. For example, the enjoyment derived from looking at the sunset can be a primary goal. In order to see it to the best advantage, one has to get to a place of high elevation with a clear view — this is an intermediate goal. In order to reach such a place, one has to do some traveling, which is an immediate goal.

Everything we do in our daily living may have one or more immediate goals. Each immediate goal may lead to one or more intermediate goals, each of which may consist of several stages. The result is a network or hierarchy of goals leading from the immediate through a number of intermediate stages to the primary, and finally to the ultimate goal.

Goals are set to satisfy certain desires. Psychologists differ somewhat as to what constitutes primary — or basic — desires. Some say "security and sustenance," others say "fear, hate, and love." Some declare that the three great complexes — ego, sex, and herd — dominate

the thinking and action of human beings. Others give three, four, or five "drives," such as security, belongingness, and sex. But regardless of all these theories, the fact is that from just six primary desires spring every one of the familiar urges to which man is heir. These desires are: *well-being, love, honor, justice, truth* and *beauty.*

Since the names we have given the six desires mean different things to different people, we will briefly define them here.

Well-being. This comes from physical security, health, comfort, and peace of mind. As is well known, body and mind are one entity. Psychosomatic medicine, now a universally accepted approach to cure, works on that basis. According to the Charter of the World Health Organization, "Health is physical, mental and social well-being." In this broad sense, health would depend upon the satisfaction of almost all desires.

Love. The desire to love and to be loved may be called the desire for "response." It ranges all the way from the devotion of a puppy to human affection of friend, child, or parent, to romantic love and sexual expression. Love is also defined in the broad sense of brotherhood.

Honor. It is used here in the sense of social approval and esteem. It ranges from the tacit approval given for daily conformist conduct to personal recognition and fame. In the interest of social approval, we follow customs and conventions of dress and behavior. No one wants to appear odd. Our desire to excel also comes under "honor".

Justice. The desire for justice, or "rightness" of human relations,

includes security and freedom—political, economic, social—since justice presides over them. In essence, justice means equality, as expressed in such slogans as "you get what you deserve" and "equal pay for equal work." It claims the equal rights of everyone to live his own life in his own way as long as he does not interfere with the same rights of others. Justice requires that one be entitled to enjoy the fruits of his own labor — which is security.

Truth. The desire for truth varies widely in form. It can be fulfilled through learning, understanding, curiosity, and new experiences of all kinds, however trivial. The desire to understand life and the meaning of life has provided impetus both for the scientific search of impersonal facts and for the profoundly personal search of God.

Beauty. The desire for beauty is mainly sensuous. It contrasts with the desire for truth, which is mainly intellectual. Beauty is conveyed by sight, sound, touch, smell, taste — by all the senses. The yearning for beauty is a kind of sensory hunger. It may express itself in the appreciation or creation of music, painting, architecture, drama, and so forth.

The primary goals of all human beings are the same but the amount of satisfaction which one derives from the attainment of each primary goal is different for each individual. The question of value will be more fully discussed in another chapter. Suffice it to point out here that the importance attached to the primary goals leading to the ultimate goal is a "matter of value." It is a personal choice.

However, the relation between the primary goals on the one hand and the hierarchy of intermediate and immediate goals on the other

hand are a "matter of fact." They are impersonal; they are the same for all. A balanced diet, for example, is an intermediate goal which leads to good health. The relation between diet and health is a matter of fact which is the same for all and cannot be ignored without due consequences, although one may put a high or a low value on one's health. A critical and wise selection and evaluation of goals will determine whether one's life is to be meaningful or empty.

Given a list of primary goals and their relative values which each person is free to choose for himself, all the intermediate and immediate goals should follow logically because they are factually related and not open to personal likes or dislikes. A detailed discussion will be found in another chapter.

CHAPTER IV

Guide to Action — Items of Living

In scientific living, every voluntary action is guided by knowledge of the pertinent facts toward the desired goal. Given the facts and the goal, the right action is a matter of logical deduction. Given the facts and the right action, successful attainment of the goal is a natural consequence.

This logical relation between action, fact, and goal is as true for a trivial matter as for a serious business; for a single, simple objective as for the totality of all the good things in life — the purpose of living; for the life of the individual as for human society as a whole.

Knowledge of the facts may be learned directly from one's own experience or indirectly from others in the form of written, recorded or oral statements. Such statements may be true or false and they must be tested and proved if they are to serve as reliable guides to action. An intelligent mind is always critical.

Facts may be only partly known or not precisely known and, to a certain extent, one has to resort to estimate or guess to plan the action. To the extent that the fact is uncertain, correctness of the action will also be uncertain. Knowledge of this uncertainty is in itself part of the guide to action. On account of this uncertainty, one must allow a margin of safety and be tolerant of the opinion of others. In planning an action, it is important to realize what one knows and what one does not know of the pertinent facts. While knowledge of the facts is the only reliable guide to action, one is

obliged, when knowledge is not available, to use other guides — hypothesis, speculation, faith, or creed. There is nothing wrong in supplementing knowledge with hypothesis, but whatever conclusion one may draw from hypothesis must be tested by experiment and experience.

If the hypothesis works, as judged by the result of the action, well and good. If not, a new hypothesis must be formulated and a new course of action charted out. The test of experience is the final judge of everything we do in life.

There are, however, things which are not open to the test of experience; they are not knowable. When did the universe come into existence? Is there a Supreme Being who created the universe? Is there life after death? Anybody may answer such questions but nobody can prove whether the answer is right or wrong. Religion is a purely personal matter. Each person may believe what appeals to him and it is a psychological fact that one may derive strength and courage from his faith, especially in time of crisis. Although faith may complement scientific knowledge, it is no substitute. When one is sick with diphtheria, faith cannot tell him the right way to cure the sickness, while knowledge of bacteriology and medicine can.

Similar to religious faith, there are creeds and dogmas of various kinds which consciously or unconsciously guide our action. Insofar as the contents of the creeds and dogmas are in the nature of things not knowable, they are a matter of opinion and are purely personal. To the extent that they can be tested by the result of experience, they should be modified like hypotheses as one's experience grows. Blind belief in, and devotion to, any doctrine or ideology is not scientific living.

The so-called intuition may simply be lucky speculations, or it may be knowledge which has sunk into the subconsciousness. Instinct is a built-in mechanism in the animal, and instinctive action, bordering on reflex action, is automatic. This area is outside the scope of our present discussion which concerns voluntary or deliberate action.

Whatever may be one's goal in life, there are certain things which every person must do. First, one must take care of one's self — develop and maintain a healthy body, mind, and spirit. Without sound health, one cannot expect to live a rich and abundant life. With sound health as foundation, one can look forward to self-fulfillment — achievement in work, love, marriage, reproduction — and to enjoyment of all the good things in life. The joy which creative and procreative activities bring far surpasses any passive satisfaction of the pleasure of the senses.

Practically all the things which one needs for various items of living are not produced by one's self but obtained by exchange. Each person produces one kind of goods or service as the result of his professional or manual work and exchanges it for all the other goods and services which he needs. By this exchange of goods and services, all members of the community are bound together economically to form a unit.

In the modern world no person can live alone. He can live only in a suitable environment, physical and social. To take care of one's self, one must also take care of one's environment.

The social environment begins with the family, then relatives and friends in the community, fellow citizens in the country, and finally, fellow human beings in the world. The physical environment begins

with the home, then the neighborhood, the town, the country, and finally, the world. One takes care of the immediate environment — family and home — directly. The more remote environment is cared for indirectly by every person through the exercise of rights and the performance of duties of a citizen.

A scientifically trained mind works like an electronic computer. Feed the instructions and data into the computer, and the correct answer comes out automatically. Feed the goal and the knowledge of the pertinent facts to a scientifically trained mind, and the right action follows logically. For every goal there is a corresponding action which is most conducive to the attainment of that goal. In fact, goal and action are the two sides of the same coin.

However, each action may have more than one goal. Eating and drinking are for nourishment, but they are also for gustatory enjoyment. Clothing keeps the body warm, but it also affords opportunity for adornment.

Conversely, a single goal may be reached in more than one way. Anything well done can bring honor and fame just as any good conduct in human relations brings social approval. Sound, vision, smell, taste, and touch can all bring pleasure of the senses. There is a network of actions corresponding generally, though not exactly, to the network of goals, and the same factual relations hold between the network of the actions as between that of the goals.

To the question: "How to live?" the answer is a list of things to do — actions — which correspond to the primary goals as shown in Appendix I. These actions may be called primary actions. *How* to carry out each one of the primary actions? The answer is again a list

of things to do. For example, to the question: "How to develop and maintain a sound body?" the answer is a list of things to do which may be called intermediate actions. There may be several stages — secondary, tertiary, etc. — of intermediate actions corresponding to those of intermediate goals. Detailed examples of the various immediate and intermediate actions and goals are given in Appendix II.

Side by side with things to do, there are other things to avoid. In other words, side by side with every "right thing" to do, there are "wrong things" to avoid. To avoid doing a wrong thing calls for positive action, precaution or at least, resolution. The things to avoid may therefore be included along with the things to do.

A noted Chinese philosopher, Tseng Tse, said, "I review myself thrice daily in the following respects: In serving others, have I been not faithful? In dealing with friends, have I been not trustworthy? In saying things, have I been not truthful?" Tseng Tse was preoccupied with human relations. To get the most out of life, one should periodically go over the whole list of items of living and check item by item to see whether one has done the right thing.

From the standpoint of cooperation, items of living are of three kinds.

1. Obligatory or personal. Those things which one must do oneself, e. g., eating and drinking, sleeping, physical exercise, act of love, and so forth.

2. Optional. Those things which one may do oneself or hire someone else to do, e. g., cooking, housekeeping, gardening, hairdressing, dressmaking, driving and so forth.

3. Exchangeable. All goods and services which are produced for exchange. No one can do all kinds of professional or manual work but each must do at least one kind.

Ancient books on living deal mainly with human relations, ethics, and politics. Books are available nowadays on every item and sub-item of living. It is therefore unnecessary for the present book to be encyclopedic. Its purpose is to survey the field of living as a whole and to expound the principles which apply to all items of living, separately or together. Specific branches of art and science which form the foundation of professional work are obviously beyond the scope of the present volume.

CHAPTER V
Fact and Value

There are two realms of human experience, the realm of fact and the realm of value. Fact dictates ways of achieving a goal, and value dictates the goal itself. It is important to differentiate clearly between the two because failure to do so may cause tremendous confusion in thinking and serious mistakes in living.

How we confuse fact with value may be seen in the following illustration: We have a given length of fence. It is a fact that the way to enclose the maximum area with this fence is to make the enclosure circular in shape. But whether we want the area to be circular or rectangular in shape is a question of value. Now, if we choose the rectangular shape knowing that we are sacrificing the size of the area, we are not confusing fact with value. Confusion occurs when we think we can have the maximum area and the rectangular shape too.

Exactly how do we distinguish between questions of fact and questions of value? Value is the domain of emotion, ambition, conscience, religion, creative inspiration and altruism. Out of value we fashion all the things that matter in life — the things we believe in, hope for, live by.

Here are some of the contrasting characteristics of fact and value: Value sets goals; fact determines methods by which they can be achieved. In other words, value determines ends and facts means. Value is entirely personal; fact entirely impersonal. Value is ascer-

tainable only by the individual himself through the subjective search of his own mind; fact can be ascertained by anyone by going to reliable sources. Value is not absolute, but relative to the individual; fact is absolute. Value changes from time to time with the individual; fact never changes.

Realm of facts

There are things known and there are things unknown, but there are also things that are unknowable. Written human history goes back only a few thousand years. Prehistoric events now unknown may be inferred some day from archeological findings. The history of the evolution of plants and animals and of the earth itself can be inferred from facts of paleontology. The history of the solar system and of the other heavenly bodies are not known but are in their nature knowable.

But if we push the inquiry to the limit, for instance, if we ask the question: "What was the origin of the universe?" We are up against the unknowable. By universe we mean not only the visible world of stars, nebulae, etc., but everything that exists. Some may say that God created the universe, without giving any information about God; and we have to ask further: "Who created God?" The statement that God created the universe leaves us exactly where we started. Some may venture an answer to the question: "What was the origin of God?" But the answer will not be any more satisfying for it will simply push the question one hypothetical step further. In short, we come to realize that the origin of the universe is something unknowable.

Just as we do not know what lies *beyond* the farthest limit of the universe, we do not know what lies *within* the smallest particle of

matter. Just as the beginning of the universe is unknowable, so also is the end of the universe. Is there life after death? Is there a place called Heaven? Hell? All such questions may be devoid of any meaning because we may be spinning a semantic web around ourselves. In so far as they have any meaning, they are unknowable.

All facts must be consistent, one with another. Every fact that is known must be the same to all observers. Fact is impersonal.

When a truth is only partly known, there is room for supposition as to what the whole truth may be. When a truth is only approximately known, there will be room for estimation as to what the precise truth may be. Future events may be predicted on the basis of present knowledge. A general truth or hypothesis may be inferred from particular facts. A completely unknown fact may be speculated.

Supposition, estimate, hypothesis, inference, or speculation of one person may differ from that of another because some fact, though knowable in due course of time, is at present still unknown. When the fact is completely known, there will be no longer any room for personal differences.

When the fact is in the realm of the unknowable, there will always be personal differences as to what the fact is. This is the case with religious beliefs. A religious belief is a kind of hypothesis which, however, unlike a scientific hypothesis, cannot be verified by observation.

The realm of the knowable is the domain of science. The realm of the unknowable is the domain of religion. The subject matter of science is fact about things knowable; of religion, faith in things

unobservable, beliefs which cannot be proved or disproved.

Science and religion, each with its own domain and without overlapping, need have no conflict. The conflict arises only when a person goes from one realm into the other without knowing it.

What is good, right, or beautiful?

A thing is said to be beautiful or ugly according to the feeling it arouses — a feeling of pleasure or disgust. Beauty may be of form, color, sound, taste, touch, or smell. To all these sensual experiences, no two persons respond in exactly the same way or degree. Beauty is purely a matter of value.

A thing is said to be good or right when it fits into a given scheme or purpose. If the scheme is agreed upon beforehand, "goodness" or "rightness" is a matter of fact. But when the scheme or purpose itself is not agreed upon, it may differ from person to person and it is therefore a matter of opinion, in effect, a matter of value.

Similarly, an act is said to be right if it accords with a given standard of conduct. If the standard is generally accepted, "rightness" of an act is a matter of fact. However, in the absence of pertinent facts and standards, there would be difference of opinion and the judgment of rightness or goodness becomes, in effect, a matter of value.

Even in a given country, the judgment of a lower court may be reversed by a higher court. The justices of the Supreme Court usually do not vote unanimously. This may be due partly to some pertinent facts being not well known, but chiefly to personal differences in the sense of justice.

There is no argument about purely factual questions; all agree that the sun rises in the east. There is no argument about purely "valual" questions. If Dick likes apples but avoids oranges while Tom likes oranges but avoids apples, that is that. It is a matter of "taste," as the saying goes. It is on questions which are partly based on fact and partly on value that endless debate rages throughout the human society. However, not all the arguments are due to a genuine difference of value between persons. Mistakes are often made on account of confusion between fact and value.

Confusion between fact and value

Ours is the age of science. This is evident in all the physical things we see around us — from radio and television to automobile and rocket. It is evident in agriculture, animal husbandry, public health and medicine. It is evident even in business administration and factory management. However, science is not evident in social relations. Though our knowledge of physical and biological sciences is sufficient to give us abundance, health and comfort, our knowledge of social sciences is not sufficient to maintain peace and cooperation in the world.

The trouble with the world today is not merely the lack of knowledge in sociology. If we recognize our ignorance in a scientific spirit we can use whatever little knowledge we do have and try to learn by experiment and experience what we do not know. We would benefit from our knowledge and would not suffer from ignorance. The trouble today is pretention to knowledge where knowledge is lacking. Dogmatism is mistaken as science. Value is confused with fact. The world is confronted with a colossal political and social crisis because there is a gigantic intellectual confusion in social and political thinking — confusion between social and political facts on the one hand and

one's pet social and political dogmas on the other.

Economists often draw different conclusions from supposedly the same data. The economist for labor always finds reason to argue for an increase in wages, while the economist for management does the opposite. When business is on the decline, the union spokesman maintains that an increase in wages would give the workers more purchasing power to buy goods and would decrease the surplus inventory which is the cause of the recession. Management, on the other hand, argues that an increase in wages would raise the cost of production and hence the price of goods still higher, and consequently would cut the sales still more. And they might argue further that what is needed to boost the economy is a decrease in wages which would bring the cost and the price down and the sales up. Obviously, the opposing conclusions cannot be both right; one of them must involve a confusion of the fact of economics with the goal of the group, which is a matter of value.

If longevity is the goal, one has to know the facts of physiology and nutrition and live accordingly — work and play in moderation and avoid dissipation of all kinds. If one wants to live for the present only, he may logically ignore the rules of hygiene. But if one lives without restraint and hopes to live long by so doing, he is confusing fact and value.

We want peace, so declares every statesman. Peace means settlement of differences, not by force but by law; and law presupposes an institution to administer it — that is, a government; and a corollary of government is the surrender of some of the freedom of the individual or state — a freedom technically known as sovereignty. Rule of law is peace. Rule of force is war. This is a fact. Those who

declare solemnly for peace but would not yield one inch of sovereignty to make world government possible are simply confusing fact and value.

CHAPTER VI

Scale of Value — Maximization of Satisfaction

We evaluate everything in life according to the amount of satisfaction or dissatisfaction it brings us. Our scale of value is just about the most important thing in life. It is our guide to action in everything we do.

Given a simple goal, there is a course of action which will bring the maximum satisfaction. Although we may never achieve it completely, we can better our lives enormously by constantly striving toward it.

In real life each person has many primary goals. For each of these goals there is a course of action which is the best. However, since time, energy, and resources are all limited, it is often impossible to do the best for all the goals. For some goals the second best may have to be accepted, for others the minimum may be all that one can afford; while still others may have to be dropped completely for the time being. A choice has to be made to get the most out of the available time, energy, and resources. This choice depends on one's own preference; it is personal.

In making the choice, one goal is "weighed" against another in one's own mind. By so doing, all the goals may be arranged in order of preference, given a "scale of value."

Success in reaching a goal brings satisfaction. The amount of satisfaction differs with different goals. Some day, it should be possible

to measure the amount of satisfaction objectively and to assign to each goal a numerical value commensurate with the amount of satisfaction it can bring. Given such a quantitative scale, the amount of satisfaction to be expected from a given course of action — which may have multiple goals — can be theoretically computed. *The best course of action is the one that will give the maximum total amount of satisfaction.*

In our present state of knowledge of psychology, the amount of satisfaction can only be felt subjectively. The scale of value which one can establish by searching one's own mind does not have the accuracy of objective measurements. Consequently, the best course of action cannot be precisely deduced. Nevertheless, the only scientific way to make a choice between several courses of action is to consult one's own scale of value.

Present value vs. future value

An expected satisfaction is always in the future. It may be received immediately or only after a long time. In weighing one expected satisfaction against another, the time element must be taken into account. In other words, the scale of value has a time dimension. The value tends to decrease as the expected satisfaction recedes from the present into the future.

The maximum total amount of satisfaction has, of course, a reference to a period of time. The period may be so short as to be momentary. It may be a day, a year, or a whole lifetime. To get the most out of life, one must plan for the whole lifetime or as far into the future as one can see.

The past is beyond our influence. Whatever success or failure one

may have had cannot be changed. The present is a mere geometric line that separates the past from the future. The present has no duration.

The total amount of satisfaction in life is the sum of that in the past and that in the future. Since the past cannot be changed, what makes for the maximum in the future will make for the maximum in life. Planning, therefore, is always for the future.

When the facts are fully known and the goal is simple and sharply defined, the best action is a matter of fact. When the facts are not fully known, the goal is multiple, or the scale of value is vague, what constitutes the best action is uncertain. In such a case, one has to recognize the uncertainty and take it into account in planning for the maximum.

To plan for the maximum total satisfaction in life, one needs to know the span of life beforehand. In a given environment there may be available vital statistics which permit calculation of the average life expectancy of a person of particular age and sex. But what is true of the average is not necessarily true for a particular individual and no foreknowledge of one's life span is possible to permit planning for a theoretical maximum satisfaction for the whole life.

Furthermore, the life span depends on the mode of living. We know, in a qualitative way, that certain modes of living tend to shorten one's life while certain other modes tend to prolong it. But we do not know the precise quantitative relation between the mode of living and life span. Lacking such quantitative knowledge, it is impossible to predict from any given mode of living what the life span will be and hence, what the total satisfaction for the whole life would

be. However, one can use one's knowledge and judgment in making the best possible plan to attain one's goal.

Planning according to the present scale of value

One's scale of value changes with time. What is the best — what will give the maximum total satisfaction — according to the scale of today, may not be the best according to the scale of tomorrow. What shall we do?

The future scale of value cannot be predicted. Therefore one can only plan according to the present scale. This is not to say that one lives only for the present. One does plan for the future but the planning is done in the light of facts known at present, including the scale of value. As new facts become known, our plan has to be altered to reach a given goal. As the goal itself changes, our plan has to be altered accordingly. Nevertheless, at any given time there is a scale of value and a maximum to aim at. One who does that consistently has a better chance of actually achieving the maximum in his lifetime than one who does not.

Factual basis of value

Although value is personal while fact is impersonal and therefore universal, value has its factual basis for each person.

The factual basis of value may be one or more of the following:

1. Heredity. Like inborn ability, one may be naturally inclined to aesthetic or literary appreciation, exploration or athletics, politics or science.

2. Inspiration from education. Stories of the life and work of

some great man may inspire one to emulate him. The life of Newton or Darwin heightens the value one places on scientific achievement. The life of Bach or Beethoven raises the value one places on music appreciation.

3. Experience. A satisfying or disappointing experience has a strong influence on one's likes and dislikes.

4. Public or social scale of value. Personal scale of value is inevitably influenced by the public or social scale of value. What is held high (or low) in the eyes of the public is, by mere conformity, generally so regarded also by the majority of individuals.

5. State of the body and mind. The scale of value changes in a predictable way as one develops from childhood to old age. To a child, sweets and toys are most satisfying. Exploration and romance come to the foreground with adolescence; wealth and honor with maturity; posterity and immortality with old age.

A temporary condition of the body and mind, such as alcoholic intoxication or sickness, may also affect one's scale of value.

Since value has its factual basis, value will change as the factual basis changes. With the exception of heredity, all the above-mentioned factual bases of value are changeable. Value can therefore be directed and cultivated. To get the most out of life, one should cultivate those values which are, in the nature of things, durable rather than those which are ephemeral. An important object of education is to build up a scale of value that will stand the test of time.

Collective scale of value

In our modern society it is impossible for us as individuals to

pursue happiness alone, since most of our satisfactions are obtained directly or indirectly through collective living. We may eat or read in solitude, but both the food and the book are produced and distributed by others. Considered from whatever angle, our happiness depends very largely on successful relations with our fellow men.

By analogy with the individual criterion of "goodness," which is the maximum satisfaction of the individual's desires, the social criterion of "goodness" is the maximum satisfaction of collective desires. There are significant differences between the two, however. What constitutes the maximum satisfaction of the individual is decided by himself alone, there is no argument. But as to what constitutes the maximum satisfaction for the society as a whole, there are wide differences of opinion.

CHAPTER VII

Social Goals

Personal goals are set according to the values of the individual. Common goals, collectively decided upon through mutual agreement, are the goals of society. Just as personal goals must be clearly defined to serve as beacons for scientific living, so social goals must be clearly defined for scientific collective living.

Social goals are derived logically from personal goals. By individual and collective effort, each person's goal is to develop, achieve, and enjoy to the fullest according to one's inborn capacity. Therefore, the social goal is to maintain a favorable environment in which each person can attain his individual goal.

To make the environment socially favorable, the society must maintain peace and order without which cooperation is impossible. To make the environment physically favorable, the society must control communicable diseases, insure the safety of food, water, air, etc. A physically healthy and socially harmonious environment is a chief social goal which only the government can pursue effectively. There are other social goals which may be pursued either by the government or by private agencies.

To assure that every person has at least the minimum education for citizenship and a trade or profession to earn a living, the government may maintain public schools and universities. To promote public culture, the government may maintain libraries, museums, theatres, parks, etc. To promote prosperity, the government may take meas-

ures to assure full employment and guarantee a livelihood by unemployment compensation, "Social Security" for old age, etc. To facilitate public convenience, the government may build roads, install communication systems and operate postal services. Some of these goals may also be pursued by private agencies.

With the lowering of infant mortality and the increase in life expectancy as the result of progress in medicine and public health, the population problem becomes more acute. The finite earth cannot support an infinite population. Since the method of the jungle — the extermination of the weak by the strong — is against humanitarian ideals, conscious regulation of population has to be resorted to. Measures should be taken to assure the optimum size of the population.

As to the quality of man, even the best of environment and the best education cannot make a genius out of mediocrity. The improvement in our physical environment and the increasing security of livelihood tend to preserve those individuals with low hereditary qualities who in former days of more severe competition would have been eliminated. Since natural selection has been held in abeyance, conscious selection in favor of desirable hereditary qualities becomes more necessary. If society is to make progress, the quality of man must improve and not degenerate.

The state is a man-made institution for the benefit of individuals, and not the reverse. It is a means to an end and not an end in itself. If the state is mistaken as an end, the "glory and power" of the state may be urged as a social goal. Such glory and power of the state may bring no benefit to the individual and can often be attained only by war — with tremendous sacrifices of human lives and happiness. A goal of the state without reference to personal goals is

not a social goal.

While it may be agreed that peace and order, sanitary environment, enlightened citizenry, public culture, prosperity, eugenics, and optimum population are social goals, there may be wide differences of opinion as to their relative importance with reference to the ultimate social goal.

On account of the limited material and human resources, the society cannot do the maximum possible for all the social goals, just as the individual cannot do the maximum for all his personal goals. In the case of the individual, the correct course of action is that which will give the maximum total satisfaction — the ultimate personal goal with reference to which the different primary personal goals can be arranged in a scale of value. This the individual can do by searching his own mind. Since the society does not have a single mind, there is no ultimate social goal with reference to which the primary social goals may be arranged in a similar scale of value.

It may be urged that "the greatest good for the greatest number" is the ultimate social goal. This presupposes that the good of one person can be equated to, or expressed in terms of, the good of another. Otherwise, it would be impossible to add up the good (happiness) of the individuals to obtain a total for the society. Therefore, "the greatest good for the greatest number" has no meaning unless there is an agreement beforehand on the relative values of the good of different persons.

How can we define the collective "good"?

Assuming that by "good" we mean human happiness, then "the

greatest number" still remains to be defined. It could mean: (a) the total measure of happiness attained by all members of the society in a given period of time, or (b) the average measure of happiness attained per life in a given period of time. In the first case, the objective would be to maximize both the absolute number of persons in the society and the amount of happiness per person. In the second case, the objective would be to maximize only the average amount of happiness per person.

Since each individual member of the society will have a different definition for maximum happiness for society as a whole, according to his own scale of value, the collective scale of value must be agreed upon collectively.

Furthermore, "the greatest good for the greatest number" must refer to a given period of time. While the life span of the individual is finite, the life span of the society is theoretically infinite. The maximum total satisfaction of an individual refers to his whole lifetime. To what period of time may the maximum total satisfaction of the society refer? In individual living one often sacrifices the near future for the distant future in order to attain the maximum total satisfaction in one's lifetime. In collective living, is it justified to sacrifice the present and the next generations for the generations yet unborn? Everyone is entitled to his own opinion.

Whether we try to fit the individual scales of value to a preconceived social scale or to combine the individual total satisfactions to form a total social satisfaction, some agreement has to be reached. The social scale of value and the ultimate social goal can only be settled, in practice, in the same way as difference of opinion or conflict of interest is settled between individuals.

CHAPTER VIII

Political Systems

Problems of collective living are many. There is one problem which is the key to all of them. It is: Who shall decide? Upon the answer to this question the political system depends.

Decision in political affairs may be made by a single person (autocracy) or by all persons in the society (democracy). Between the two extremes there are all kinds and degrees of democracy.

Autocracy may be of a single person (absolute monarch or dictator), clique (oligarchy), party (party-dictatorship), or class (aristocracy). Democracy may be universal or selective. Every person may have a vote or only those with certain qualifications may vote. The votes of all persons may be counted as equal, or they may be weighted according to the value of the contribution which the voter can make to the welfare of the society, as judged by education, ability, experience, etc. Democracy may also be selective regarding the kind of question to be decided — question of fact or question of value. There may be universal democracy in deciding questions of value, e. g., what the goal of the society shall be. And there may be technocracy — rule of the experts — in deciding questions of fact, e. g., how to reach a goal already decided upon.

A political system is a way of cooperative living — a means to an end and not an end in itself. If it is taken or mistaken as an end in itself, it is a matter of value, and one is entitled to one's own likes and dislikes. One person may like dictatorship as an end in itself,

while another person may like democracy. That is a question of value and not open to argument. Conversely, if a social goal is agreed upon, the political system most conducive to the attainment of that goal is a matter of fact. Human beings are not equal in intelligence and knowledge and, therefore, not equally able to form sound judgments. To take into account this difference, the voice (vote) of each person may well be weighted accordingly in questions of fact. On the other hand, it may be urged that equality of voice is more conducive to harmony and cooperation. For a given social goal, there is a type of democracy that is most conducive to that goal.

If a common social goal is agreed upon by all the people, and if the pertinent facts are known, the best political system to attain the goal would be a matter of logical deduction. Unfortunately, not only is there no agreement on the ultimate social goal but, social phenomena being so complicated, the pertinent facts are not known with any degree of certainty or precision.

For instance, the optimum degree of democracy for maximum social, economic, and political efficiency depends on the size and age-distribution of the population, the average educational level, the political maturity, the temper of the people, etc. The relation of all these factors must be known with quantitative precision to make an accurate prediction possible. Without such knowledge the correct collective action cannot be logically deduced. Consequently, the best political system must be decided upon, in practice, in the same way as all differences of opinion are resolved in the society.

Whatever be the form of government, the declared goal of the society is "the welfare of the people." Actually the goal of the society, as judged by social action, depends on the form of government.

Human nature being what it is, the highest goal of the society tends to be identified with the goal of the ruler. In an absolute monarchy, the highest goal is the security of the throne and the dynasty. In a dictatorship by a single party, it is the security of the party rule. In a democracy, the social goal is that of the party in power — that is, the party which has the majority support.

The key question

How to resolve differences of opinion into unity of action?

In the history of human society there are essentially two ways of resolving differences: by law and by force. Law may be established in the first instance by force (autocracy) or by agreement among the people (democracy).

If force is the sole arbiter of differences, the society is in a state of anarchy. In fact, it is no society at all. Like animals in the jungle, primitive men probably lived in a state of anarchy. In all civilized societies there is law of some kind which regulates the conduct of one person toward another and toward the society as a whole. Even a despot uses law as an instrument of government, although the law may be of his own making. In a democracy, laws are enacted by voluntary agreement of the people or their representatives. A law democratically enacted represents the will of the majority of the people and hence will be supported by more people than the one imposed by a dictator.

Settlement of Dispute: Peace and War

When one person comes into contact with another, there is always the possibility of dispute between them on account of a conflict of interest. In the jungle, a dispute is settled by a fight and the

victor has his way.

In civilized societies, a dispute is settled by law and not by force. Although local fights still occur occasionally, peace and order are well maintained for the great majority of people in the society.

Since it is against the law to appeal to force as the arbiter of disputes, it is illegal for a person to carry arms without a license. Prohibition of private citizens from carrying arms is a preventive measure against disorder and makes it easier for the police to enforce the law.

What we have learned about maintenance of peace between persons holds also for peace between towns, states, and nations. When one political unit comes into contact with another, dispute always arises between them on account of a conflict of interest. With absolute sovereignty, cities have gone to war (as in ancient Greece and Medieval Europe), but when cities merge their sovereignties to form a state, they settle their disputes according to law and they live together in peace. Likewise, with absolute sovereignty, states have gone to war (as in Germany before the unification), but when the states merge their sovereignties to form a nation, they are governed by law; they settle their disputes according to law and they live together in peace.

One person may like national sovereignty with all the supposed glory and power of a nation as *an end in itself;* another person may like a world government above all nations. That is a question of value and not open to debate. On the other hand, if all agree that world peace is the ultimate social goal, then the form of political organization for the world most conducive to peace is a question of fact.

With absolute sovereignty, nations have gone to war and they will continue to do so until they merge their sovereignties to form a world government and settle their disputes according to law. World peace will come only when there is a world government with a police force to enforce peace and order among nations. Just as it is essential for peace among persons to prohibit the possession of arms, so complete disarmament is essential for peace among nations. Peace and war are conditions of the society which are the results of two different ways of living — settlement of disputes by law or by force.

Once the key political problem of collective living is settled, all the other problems of collective living can be solved in an orderly manner. But there may be plenty of debate.

What shall be the responsibility of the government and what shall be the responsibility of the individual? Shall the government do no more than the maintenance of peace and order and sanitary environment or shall it undertake to provide education and livelihood for all? Shall there be central planning in production and distribution, or shall economic decisions be left to "dollar balloting" of the consumers through the pricing system in a free market? Shall government provide public transportation, communication, and utilities, or shall these be left to private enterprise? Shall the individuals be free to choose their work or profession or shall they be regimented? Shall all workers share equally the benefits of social production or shall they share unequally, each according to the value of the work performed?

Each of such economic questions can be answered in essentially two opposite ways: One way is based on individual responsibility, the other is based on collective responsibility. If an economic system

is taken or mistaken as an end in itself, it is a matter of value and one is entitled to his likes and dislikes. If an economic system is a means to an end — an agreed social goal, e. g., maximum production per worker or maximum standard of living for the average person — then it is a matter of fact as to which system will be more conducive to the attainment of that goal.

There are obvious advantages and disadvantages of free economy as compared with planned economy, but the over-all result cannot be predicted with certainty. The final answer can be obtained only by appeal to fact — the test of experience. Before that time comes, the only way to decide on an economic system is again the way of resolving differences of opinion into unity of action.

CHAPTER IX

Universal Covenant

We have seen that there are differences of opinion regarding the ultimate social goal which in practice can be decided upon only in the same way as any difference of opinion is resolved. But the best way of resolving differences of opinion can be decided upon only with reference to the ultimate social goal. Whether we begin with the ultimate social goal or with a way of resolving differences, we must begin somehow with an agreement to make the world-wide human society a reality. Such an agreement is proposed below.

I. Individual rights

1. In individual living each person has the right to live in his own way as long as it does not interfere with the same right of others and is within the law of the society of which he is a member.

From this basic right, all the so-called human rights (personal freedoms) can be derived: freedom of thought and expression, freedom of religious belief, freedom of choice of work, freedom to enjoy the fruits of one's own labor, freedom of love and marriage, freedom of residence and travel, and so forth.

Personal freedom to pursue happiness in one's own way is necessarily limited because (a) all persons live on the resources of the same earth, and (b) in modern society no person can live by his own efforts alone; all are more or less interdependent through the bond of co-operation.

Hence freedom is not absolute but relative. With more cooperation in production, there are more interdependence and more restriction of freedom. The loss of some personal freedom is the price paid for a higher standard of living which cooperation makes possible.

Complete freedom is possible only in a Robinson Crusoe type of society. In real society, there are all degrees of freedom according to the degree of interdependence or collectivization of production.

2. In collective living, each person has the right to a voice in making decisions. This right may be exercised directly by referendum or indirectly by representation.

Right is not inborn or given by nature. It simply represents an agreement of the people. For every right enjoyed, there is a duty to be fulfilled. To enjoy personal freedoms, each person has the duty to respect the same freedoms of others. To enjoy protection of the law, each person has the duty to abide by the law. To enjoy the right to vote, each person has to perform the duties of the citizen.

II. Rights of political units

1. Each intermediate political unit (town, state, nation) has the right to manage its own internal affairs as long as it does not interfere with the same right of others and is within the law of the higher political unit (state, nation, world) of which it is a part.

The above mentioned right includes the freedom to make laws, to choose the form of government and economic system, to choose political affiliation with other political units, and so forth.

2. Each political unit has the right to a voice in making decisions

about common affairs of the next higher political unit of which it is a part.

3. The number of representatives or the weight of the vote of a single representative shall be based on the number of people represented, and their ability to contribute to the general welfare, as judged by educational level, economic productivity, and such other factors as may be agreed upon.

Just as personal freedom is limited by the law of the society, so the sovereignty of a political unit is limited by the law of the higher political units of which it is a part. Just as a person enjoys personal rights in the society only by performing the duties of the citizen, so a political unit enjoys its rights only by fulfilling the duties of membership in the higher political units.

The individual and the world-wide human society are the only political entities which exist in nature. The intermediate political units (towns, states, and nations) are all man-made. For convenience and efficiency of administration of public affairs, some of these intermediate political units are necessary, but they should be limited to the minimum number since they tend to divide humanity into rival units and constitute a cause of dispute. These intermediate political units can live together in peace only when their sovereignty is limited by law, just as individuals can live in peace only when personal freedom is limited by law.

III. Settlement of disputes

All disputes, if not settled by negotiation between the parties concerned, must be submitted to an arbitration board or a court for settlement.

No disputing party has the right to use force or threat of force or coercion of any kind to further its aim. In case public interest is directly or indirectly involved, the disputing parties are required by law to settle their disputes in such a manner as not to injure the public.

The above covenant applies to *all* kinds of disputes, between individuals, groups of individuals, or political units. It applies, of course, to disputes between labor and management.

IV. Compensation for services

1. Each person who performs a service is entitled to receive a salary or wage according to the value of the service as judged by the society. Every person who performs a service or produces goods for another is a worker. He may work mainly with the hands or with the brain; he may work for a private citizen or for the public. Whatever may be the nature of the work or service — from the head of the government to the street-cleaner — a worker receives a salary or wage, or in case of self employment a "profit", as compensation for his service.

2. All persons who perform the same service (in quantity and quality) are entitled to receive the same compensation, irrespective of color, sex, nationality, or religion.

3. The owner of the capital used in production is entitled to receive dividend or interest according to the value of the capital used as judged by the society. Since capital is the product of past labor, the owner of capital is entitled to a compensation just as current labor is.

In a free economy the compensation for each kind of service or for the use of capital is determined by the unseen hand of natural economic laws, by the "dollar balloting" of consumers in the pricing system. Thus, the price of each kind of service, like each kind of goods, is determined by the "value" which the consumers place on it. In other words, each worker is compensated for according to the value of his service, as judged by the public.

True, the salaries for many workers such as those of professors and public servants are fixed for a certain period of time and do not fluctuate like the price of commodities. Nevertheless, the unseen hand of economic laws still operates, as each worker seeks the highest paid position, other things being equal.

In a planned economy the compensation for each kind of service may be decided by a central authority but still according to the value of the service as judged by the authority.

Whatever be the economic system, it is only fair that the compensation for service be determined by the value of the service as judged by the society.

To assure uninterrupted cooperation and to avoid economic loss, each type of service shall be given a "value rating" by the society. Thus, every worker — whether a college professor, a government official, a mechanic, or a farmer — receives a fixed salary, each according to his value rating.

The rating is subject to review and revision by the society from time to time — say every 5 or 10 years. But it need not be a perennial affair. The value rating of a service may be increased or

decreased as the nature of the service and the conditions and methods of production change. It would be sheer injustice for a group of workers to demand an increase in wage on insufficient grounds, especially when their strike can directly hurt the public.

Each person (worker) has the right to choose the kind of service which he wants and is qualified to give, but the worker has no right to demand a salary beyond the value rating set by the society.

There is no theoretical way to deduce the just price for the use of capital. Like the value rating of current labor, the price for the use of capital can only be a matter of agreement between the parties concerned or a matter of judgment by the society or its duly constituted authority.

CHAPTER X

Evolution of Ways of Living as Influenced by Science

Change is the rule of nature. All living things are evolving. The earth upon which we live and the innumerable stars we see in the heavens are evolving.

Man's way of living has undergone tremendous changes since prehistoric times (see Appendix III). These changes have come about for different reasons. Change of circumstance, e. g. climate or topography may require adjustment in the mode of living. Progress in knowledge may open up new or more efficient ways of doing things. Change in the scale of value may cause shift of emphasis from one primary goal to another.

The most important change in man's way of living during the last three hundred years has been in the intellectual field by way of scientific learning and thinking. The credulity of the primitive man was like that of a child; he believed in every legend and hearsay, in special creation and in the flatness of the earth, in astrology, and in geomancy. He believed in gods of all kinds, each presiding over a thing or phenomenon, from the sun to the earth, from rain to wind, and from war to peace.

Gradually it dawned on man to learn the truth directly from nature by observation instead of from books and legends. Man became more critical and accepted a story as true only when it was consistent with all other truths. We saw the beginning of the scientific spirit

in ancient Greece and China, but it lay dormant for many centuries. The scientific attitude — the respect for truth — is the spirit of our time. Scientific research, by observation and experimentation, is the standard method of discovering truth. The soundness of this method has been amply demonstrated by the fruitfulness of its results. Indeed, all the material progress in our ways of living has resulted from applying scientific methods.

Science has changed our ways of living with respect to physical things: transportation, communication, production of food, clothing and shelter, prevention and cure of disease, etc. These changes have brought about corresponding changes in the social institutions and created new problems. Consequently, man also had to change in order to get more out of life or simply to survive.

When human beings come into closer contact, as population increases and transportation improves, more conflict is apt to occur and the only way to keep peace among men is to limit personal freedom of action by law. The individuals surrender a part of their freedom to establish a government above them. Similarly, when groups of people or political units — tribes, cities, states, nations — come into contact, conflict occurs sooner or later and the only way to keep peace among them is to limit their sovereignty by law. The political units surrender part of their sovereignty to establish a government above them. As we have learned from history, rule of law means peace while rule of force means war.

By and large peace has been maintained within nations, states, and towns by law and government, but war between nations still occurs because there is no law and government above the nations. Nations today are, in time and space, closer together and more inter-

dependent, economically and culturally, than ever before. The world-wide society is already a fact, though not so recognized. In the meantime, the destructive power of armaments has increased beyond imagination and war is no longer a practical instrument for settling political disputes. To insure peace, the only course open to the nations, and the only sure way to the survival of the human race, is the surrender of their sovereignty and the establishment of a world government.

The industrial revolution has given rise to new ideologies in the social and economic realm. Instead of leaving to each person the responsibility of making his own living according to ability and diligence, it has been advocated that the state take care of all. The state can do this only by controlling all production. The price for the "right to work" is the surrender of personal freedom to choose work according to aptitude and inclination. Similarly, the state may take over the means of production and produce such goods and services according to the plan formulated by the government. The idea of collectivization, versus individual freedom and responsibility, is not limited to purely economic matters. It has been introduced into medical service, housing, child care, scientific research, education (including television, radio, and newspaper), practically into every item of living.

Both private enterprise and collectivization have obvious advantages and disadvantages with reference to an agreed goal. Whether the over-all effects are advantageous or not, however, cannot be predicted or deduced since social-economic phenomena are so complicated that the precise quantitative relations between the pertinent factors are still unknown. In the face of great uncertainty, there is no justification for rushing any revolutionary changes in the existing social-economic order. Scientific living calls for review and revision

from time to time, but changes must be made only for the better. When the pertinent facts are only partly known, one must try to find out more by cautious experimentation, starting on a small scale or in a limited scope.

A new drug is tried out first on animals. If the result of the animal experiment indicates some therapeutic value, without undesirable side effects, the drug may then be tested on a single patient, and if successful, on more patients. Only after unqualified clinical success may the drug be recommended for general use. A new drug tried out on a patient may kill him. The stake is the life of one person. When a new social-economic system is tried out on a society, such as the commune system in Communist China, the stake is the life and happiness of millions of persons. If cautious experimentation is necessary before introducing a new drug, how much greater caution should be exercised in experimentation with a social-economic system? The experimentation should begin on a small scale, gradually increasing in proportion as the results of preliminary experiments give promise of success. No blind belief in any dogma can decide the factual question whether a new system is good or bad with reference to an agreed social goal. Only appeal to facts by cautious experimentation can.

CHAPTER XI

Let's Begin with Food

World economic planning must begin with something essential, definite, and immediately related to life. That something is food, the most essential item of human existence.

Physiologically, food is the most important factor in man's environment. Unlike housing and clothing, requirements of which are elastic and variable, the need for food is urgent and constant. One can be as comfortable in a ten-foot-square room as in a palatial home, or get along without a new suit of clothes for years; but without food, life cannot be sustained.

In terms of health, food is vital. Not only will a serious lack of vitamins, minerals, or proteins cause deficiency diseases, but it is well known that even a slight deficiency may cause ill-defined poor health and low resistance to such infections as tuberculosis.

Because of its importance physiologically, food is important economically. It is the largest single item in the family budget for most of the world's peoples. In countries with a relatively high standard of living, food expenditure amounts to about thirty per cent of the average family income, while in others it reaches fifty to sixty per cent. About two-thirds of the world's population consist of farmers, but many of them produce barely enough to maintain their own lives. From the economic standpoint, if one produces no surplus, he makes no contribution to society.

An additional reason for starting world planning with food is that food production, more than any other commodity, can be planned on the basis of a precise knowledge rarely attained in human biology. Advances in the science of nutrition make possible the calculation of individual requirements in terms of foodstuffs, or of calories, proteins, vitamins and minerals, according to age, body weight, occupation, and sex. Thus, world food planning can be based on population statistics on the one hand, and the nutritional requirements of the individuals on the other.

The number of people to be fed, here and now, is a fact not open to debate. Physiologists can agree fairly well on the minimum nutritional requirements in terms of chemical constituents for health and efficiency. There is, of course, some latitude for variation in terms of foodstuffs within which individuals may choose according to taste and ability to pay. But such variations are relatively unimportant under present circumstances, and will in no way affect the practicability of planning.

Our underfed world

Some two out of three persons in the whole world are undernourished. The world has never produced enough food to satisfy the requirements of the entire population for health and efficiency. Among the main reasons are the immense population and the low living standards in many areas of the world. As long as the population keeps increasing at a rate faster than that of food production, any attempt to correct the malnutrition of all the peoples of the world seems hopeless. On the other hand, it is essential that food production be planned and boosted, first to meet the minimum nutritional requirements, and eventually to satisfy the optimum of every individual.

This planning will consist of the assignment of different areas of the world to production of different foods, since certain areas are naturally more productive than others, and certain districts can produce specific foods more economically than other districts. The assignment will not be made by dictation, but by negotiation and agreement between the different areas. The agreement will include terms of exchange of food produced in one area with food produced in other areas. Planning of food production will lead to planning for production of most, if not all, other important goods and services to be exchanged, because of the fact that some areas will produce more food, others less, than their local requirements. And the unequal import and export of food must be balanced by the export and import of other goods or services.

The agreement on the terms of exchange will encompass two elements: (a) the quantity, and (b) the value, of goods and services to be produced. If the quantity is agreed upon beforehand, there will be no excess or deficiency. Everyone's food requirement will be satisfied as planned. If the value per unit of service is agreed upon beforehand, it follows that distribution is also agreed upon beforehand. Each will receive according to plan.

The agreement on the value of services means stability of prices, not only of foodstuffs, but of all other goods and services which become involved in the terms of exchange resulting from food planning. The stability of prices goes hand-in-hand with stability of the value of different kinds of labor, in other words, stability of wages.

Thus, by starting world economic planning with food production, all economic values will be stabilized through setting into motion a chain of exchanges. This stability means economic equilibrium and

social harmony.

Let FAO do the job

The organization best qualified to bring about world-wide collective action in food production and distribution is the Food and Agriculture Organization of the United Nations. Its activities have included the accumulation and interpretation of facts and the formulation of recommendations. It has promoted research in methods of production and processing of foods. It has also conducted world food surveys and furnished technical assistance to member nations.

With all this fine work, however, the FAO has only played on the periphery. It has not touched the core of the world food problem which it was created to solve, namely, to increase the production of food to satisfy the world's health needs. This objective can only be attained by world-wide planning, an impossibility as long as there is no world government of which the FAO can be a part; for it must have authority before it can carry out a coordinated food production and distribution program for the whole world.

World prosperity requires that increased production in one section of the society be balanced by an equal increase of production elsewhere, to make exchange possible. World depression is the result of decreased production in one section of the society, necessitating a decrease in production elsewhere. Depression would be impossible and prosperity assured if there were agreement beforehand on production and distribution.

The importance of planning, with agreement on production and distribution, to individual happiness and world peace cannot be overemphasized. Production and distribution are only economics, but

they play a vital role in the welfare of the people. Through world economic planning starting with food, man's economic problems can be solved; and with economic problems solved, the solution to all other problems will be facilitated.

CHAPTER XII

Health

The health of the individual depends on his heredity, environment, and mode of living. To achieve maximum health, in addition to curative care, we must practice personal hygiene and apply the sciences of medical genetics and public health.

In all these areas, the aim of the individual and the society is not only the negative one of avoiding what is bad, i. e., the prevention and cure of disease, but also the positive one of promoting what is good, building up an exuberant health. Over these vast domains, how shall the individual and the society divide their responsibilities?

Personal hygiene is clearly an individual responsibility. Once society has provided the individual with a minimum wage so that he can provide himself with adequate food, shelter, clothing, recreation, and the health education to live in the optimum way, he should take care of the rest.

Genetic health can be promoted by selection of human reproduction from the standpoint of heritable health qualities. It is a joint responsibility of the individual and the society.

Public health is definitely recognized as a collective responsibility. It is the science of preventing disease and promoting physical health through organized community efforts for sanitation. It includes the control of communicable infection, and the early diagnosis and preventive treatment of disease.

It is a fact that millions in the world today cannot provide their own curative care because of the lack of physicians and medical facilities. Even in the more prosperous and progressive countries, the preponderance of doctors and hospitals is concentrated in the cities. Large areas of the country and whole sections of the population are inadequately protected. Even where physicians and facilities are available, more often than not the individual cannot pay for them. If the society as a whole is to be protected, no segment within a country or within the world can be allowed to be without health assistance. Physicians and facilities should be available to all and, if the individual cannot pay for them, some other means must be found.

Health determines the individual's production efficiency, energy for work, and absenteeism from work due to illness. Like protection from other unpredictables such as fire, theft, and death, medical protection can also be provided through insurance. Members of the society pool their resources, and the more fortunate protect the less fortunate. Whether the insurance should be collective and compulsory or individual and voluntary is controversial, a matter for agreement among members of the society. It highlights the whole general question of individual versus collective responsibility.

Private practice is conducive to efficiency and progress while socialized medicine tends to bureaucracy and inefficiency. On the other hand, private practice, especially the "lone doctor," as contrasted with group practice, is wasteful. The same number of doctors now crowded in urban areas can give needed service to a much larger number of people when redistributed under a system of organized medical service for the community as a whole.

The most efficient medical care for the community will be found somewhere between the two extremes of private practice and socialized

medicine, represented by a combination of universal health insurance and private practice.

CHAPTER XIII

Child Care

Whatever a child's inborn qualities, his treatment and surroundings may be decisive in his development into an asset or a liability. With a given heredity, the new individual can become healthy, strong, happy, and useful, or unhealthy, weak, miserable, and helpless, according to the way he has been handled prior to birth and during his early years. It is one of the great anomalies of our time that this vital concern of the society is made the sole responsibility of the parents, qualified or unqualified, informed or ignorant, good or bad, thus running the risk of jeopardizing the new individual for life.

It is during the formative years of childhood that the mental and physical foundations of the new individual are laid. Then, the capacity for physical growth is greatest and the opportunity for acquiring the right habits most favorable. If growth is retarded by the lack of optimum nutrition or exercise, or because of illness, the individual can never make up for it in later years. If bad habits or the seeds for neurosis are planted in the child's early years, then both he and the society may suffer for it in adulthood. The child is cheated of his full birthright if he does not get a favorable start in life.

Are parents experts?

Are parents generally qualified to provide the child with his needs for full development? The mere act of marriage certainly does not automatically confer upon a couple proficiency in the very specialized and complicated field of child care. Neither does the biological process of maternity necessarily equip a woman with personal qualities

of patience, thoroughness, and love for children, not to mention the requisite knowledge of infant feeding, nursing care, hygiene, psychology, and education.

No matter how well-intentioned the parents may be, their first child is usually handled in a trial-and-error fashion. They may profit from their mistakes, but by the time they have learned something of the science and art of child care, the child may have sustained irreparable damage, physical or mental.

Even with proper training, not all mothers have the necessary aptitude, and few homes are equipped with facilities for all-around child development. Like any service, child care can be made efficient by entrusting at least some of the work to specialists.

Expert care versus parental care

Really expert care would mean institutional care, against which there is marked public prejudice, and for understandable reasons. However, both parents and society want the child to have every opportunity to develop its potentialities to the fullest, and that means expert care. Roses grow in the wild here and there, it is true, but only in the greenhouse of the horticulturist are the fine specimens of unusual size and beauty produced with certainty. Children grow into adults somehow, and some fine specimens are produced by chance. But only with right cultivation can fine human specimens be produced with certainty.

The main reason for the odium attached to children's institutions is the association with orphan asylums. But the latter are charitable institutions for the care of otherwise homeless children, where the standards are usually lower than in the average home. Child rearing

in scientifically regulated institutions could carry as much prestige as does schooling in some of our esteemed private schools. As a collective responsibility, they would be designed to excel, not to be inferior.

The prejudice against scientifically designed nurseries may one day follow that against hospitals. The former custom of caring for a patient at home, where he was psychologically more comfortable, has been reversed only in recent years in favor of the hospital's technical advantages.

Early training

Another important factor in child care is early education. While the greater part of basic education must await schooling, education really begins at birth. The early years are most important for the inculcation of good habits of self-care. It is also the time to develop desirable personal qualities. Orderliness, thoroughness, patience, and thoughtfulness are essential traits for a successful life.

While the contents of basic education in the public schools are generally the same for all children, ideally, each child should be trained separately from birth on for maximum development according to his individual potentialities and type of constitution.

To sum up, institutional care of children has technical advantages while home care may have psychological advantages. Love is important for the child's emotional development, and in an institution where this is lacking, the child may not develop normally. However, an institutionalized child can be visited by the parents daily, cuddled and caressed as at home. Parents can give their love to the child without the necessity of attending to the routine of feeding, bathing, dressing, and other chores which even now are advantageously left

to trained nurses and governesses in well-to-do families.

Home care places the responsibility on the parents while institutional care is a natural consequence of collective responsibility. Somewhere between exclusive parental and exclusive social responsibility, there is an optimum division of responsibility which will give the child the best chance for full development.

However, as long as the parents have to bear the main responsibility of child care, as it appears likely for some time to come, knowledge of the fundamentals of child care should be a prerequisite for parenthood, and its dissemination a responsibility of the society which should guarantee the minimum standard for child care, while permitting the parents to improve on it if they could.

A way of assuring the minimum would be a system of medical insurance, collective or private, for prenatal examination, delivery, and postnatal care. Other assurances that the health of the new individual would not be left to chance would be assistance to mother and child in the form of child allowance, priority in the rationing of milk and other foods, well-baby clinics, and the like.

CHAPTER XIV

Education

Preparation for optimum living is the aim of all education. Since optimum living is impossible without the minimum of world peace and unity, it follows that education must be oriented to world citizenship.

Everyone wants to have the ability to produce and the capacity to enjoy life. Society wants everyone to know how to live in harmony with his fellow men, how to be an asset, not a liability.

Corresponding to these objectives, education may be divided into three kinds: basic, professional, and cultural.

Basic education for world citizenship is clearly a social responsibility. It must be guaranteed to every individual. Cultural education, like other amenities of life, should be left to the individual. Aptitude, inclination, and ability to pay should determine such education. Professional education should depend on individual qualification, with the society assuring, through scholarships, that those possessing high potentialities have the opportunity for full development. At the same time, the individual should be free to acquire professional education through his own or parents' efforts.

The following is a check-list of the contents of education for optimum living and world citizenship.

Basic education

1. Use of tools of expression and communication: language (speech,

reading, writing), drawing, music.

Language, by which thought is communicated from one person to another and knowledge transmitted from one generation to the next, unites human beings both in space and in time. It is the basic instrument of collective living.

Language has two uses, utilitarian and artistic. As an art (in literature), like any other art, variety is desirable. As a tool of communication, the aspect which concerns everyone, one language is enough. The multiplicity of tongues spoken by different peoples in the world only serves to hinder communication. Language is only a system of symbols of ideas comparable with a telegragh code; the same idea can be expressed in any language. From the utilitarian standpoint, the time spent in learning a second language in order to communicate with people in other segments of the world-wide society is a waste which could be avoided by adoption of a world language. Until such time, however, it should be feasible to agree on an auxiliary language, choosing one which is most commonly used in the world today.

Drawing, like language, is an instrument of expression and communication. While language is phonetic, drawing is pictorial. It develops the power of visualization.

Music, as a universal language of feeling, should be promoted in the interest of world unity. It is essential to full development of the personality.

2. Knowledge of man and his environment: physical, biological, and social sciences; history and geography.

An understanding of the philosophy of science is an important part of the basic education for world citizenship. Science unifies all who understand it; only one kind exists and there can be no differences of opinion. Its method and spirit transcend national boundaries and its accumulated knowledge is the common heritage of man. This philosophy need not be taught as a separate subject but should be made a vital part of every science as the surest guarantee of democracy and peace.

Physical sciences: In order that the individual may live in harmony with nature, he needs to know of what everything around him is made as well as how changes occur. Physics and chemistry, besides teaching fundamental truths of nature, also have practical uses in everyday life. Study of astronomy and geology trains the individual to see the relative order of magnitude of things. In that way the student recognizes his correct time and space relationships with the rest of the universe.

Biological sciences: As a living being, a person needs to understand what life is, and his own place in nature. Biology broadens a person's understanding of living things, including himself. Physiology and hygiene impart knowledge of how to live in the optimum way to attain good health.

Social sciences: The individual needs to understand the complex society of which he is a member in order that he can act intelligently. He needs to know how to behave toward his fellow men (ethics) and toward society as a whole (civics). For marriage, a course concerning marriage should be prerequisite; for parenthood, a course in child care.

All the sciences are to be taught as a coordinated body of knowledge of the physical, biological, and social world in which man lives, rather than as separate compartments. Of necessity, fundamentals would be dealt with rather than details.

History and geography: As preparation for world citizenship, history is to treat the world as a whole, rather than to emphasize individual nations. Important landmarks in the march of civilization are to be stressed rather than wars and conquests. Geography should emphasize natural boundaries, such as mountain ranges, rivers, oceans, and so forth.

3. Ability to think for oneself: logic and mathematics.

Logic: No amount of factual knowledge can make a person free unless he has the ability to utilize it, nor is such a person qualified for world citizenship, since he may be led blindly into belief and action injurious to the society. Even more important than knowledge of the sciences is the ability to reach conclusions logically reasoned from facts. The individual needs to know how to differentiate for himself between truth and opinion, and the degree of probability of a thing being true or untrue.

Mathematics: Mathematics may be called a language of logic. Useful in solving practical problems of living, it is also an excellent mental drill making for logical and accurate thinking.

4. Manual arts: The manual arts develop accuracy and skill of manipulation and observation as well as the power of comprehension. Although arts and crafts belong to the vocational schools, basic education should include some manual art, such as carpentry and sewing.

Cultural education

The aim of cultural education is to develop the individual's capacity to enjoy, both mentally and physically. Health and culture are as inseparable as are body and mind. Cultural education, therefore, would include appreciation of beauty in art, music, and literature; and development of the ability to participate in artistic activities to the extent allowed by his talents and inclinations.

Professional education

The aim of professional or vocational education is to develop the ability to produce. Every production, except where man is used merely as a source of power, requires knowledge of science and art. If production is to be efficient, the producer must be properly trained, whether the training be for a barber, dancer, teacher, chemist, or a high executive.

In a properly run society, the number of students for professional training would be regulated according to the requirement of the society. Those graduating each year in each professional category would equal the number of professionals to be replaced due to retirement, death, and other reasons. It is a very serious matter indeed that in many democratic countries today no correlation is made between trainees and jobs and, as a result, a student's decision is a highly risky business. He may undergo four or more years' training for a profession only to find upon graduation that he has made an unfortunate choice market-wise. It is not until *after* he has made the costly mistake, which means so much to himself personally and to society generally that he is greeted with a government report revealing his error. With given talent and abilities, a student might just as well have trained for certain professions which are in great demand, had he known in advance.

The number of persons required for each profession will change as civilization advances. Thus, as public health improves, fewer doctors may be needed. At the same time, more engineers may be required to further improve the physical environment. Both the quality and the quantity of professionals in training should be reviewed from time to time.

One much neglected need has been the training for political service. Public administration, jurisprudence, and public relations, at every level, are sciences and require professionally trained personnel.

Special training should be available for all branches of government service: executive, judicial, and legislative. Executives should be trained in administration, jurists in jurisprudence, and legislators in a broad foundation of general education as well as in the art of expression for the faithful transmission of the people's will.

CHAPTER XV

Cultural Life

Maintenance of a minimum healthful environment, we have shown, is a collective responsibility; so is the maintenance of a minimum cultural environment. In both cases, the collective approach provides assurance that the necessary minimum will actually be provided. Such a minimum cultural environment would (a) guarantee basic education to all, (b) aid those individuals with high potentiality to get the professional and higher education needed for their full development, (c) support public institutions for dissemination of culture, such as research institutes, churches, museums, libraries, theaters, concert halls, stadiums, parks, etc.. and (d) operate and set standards for the use of mass media of communication — press, movies, radio and television.

The first and second points have been discussed under education. The third and fourth points will be discussed here from the standpoint of science, religion, and art.

While the support of certain cultural institutions has long been regarded a municipal or national responsibility, much more along this line can be done with advantage.

Science

In the creative pursuits of arts and sciences, freedom is essential, Yet, in both instances, a certain amount of government support to insure the minimum can be advantageously extended without danger of abridging individual freedom.

In scientific research, support could be given in two areas, (a) the execution of fundamental research, and (b) the solution of specific practical problems. In both areas, governmental participation can set standards of excellence for private institutions to emulate, and at the same time fill the gap which educational institutions, private industries and individuals leave unfilled.

The advantages of government-coordinated scientific research were demonstrated during World War II in the United States of America. Government access to the intellectual and physical resources of the society has resulted in advances which the lone scientist or even the largest concern in private industry would have taken years or generations to achieve. Another advantage in government participation is that by giving contracts to universities and other research institutions over the country, a coordinated plan can be developed for a single project of a magnitude not ordinarily feasible.

Many specific practical problems need urgently to be solved for better living, such as problems in agriculture and public health which are untouched by private agencies. Universities concentrate primarily on theoretical, rather than practical, problems. Private industries are motivated by profitable, rather than welfare, projects. By pooling its vast resources and focusing them on a narrow area of inquiry, the government can achieve phenomenal results, as in the production of penicillin during the last war.

As long as no government monopoly exists, and no regimentation in the control of the scientific projects it supports, there can be no danger of stifling scientific progress through bureaucracy. Consequently, projects such as those sponsored by the United States National Science Foundation can only benefit, not hamper, the cause of scien-

tific advance and the objective of better living for the individual.

Religion

In the interest of freedom of conscience, most of the world's nations have separated church from state, but an all-faith church is greatly needed. The church-going population has dwindled over the years and is in the minority, a state of affairs widely deplored. It would appear that the majority are not necessarily irreligious, but simply unable to accept the whole contents of any single orthodox religion. These people need spiritual uplift and seek it in vain through other passive means, for they can find no appropriate place where they may go for worship, meditation, and spiritual nourishment. There could be no reasonable objection to an all-faith church open to the worship of all, be they Christians, Jews, Mohammedans, Buddhists, or those with no professed affiliation.

Creative art

On the surface, it would appear that in creative art, the individual should have complete freedom. But a closer look will show that society has a definite concern in this area.

Art covers a great deal of ground but we can conveniently separate it into two arbitrary categories: fine art and commercial art. The latter is a private matter and society's concern is limited to the prevention of harmful influences. In fine art, however, society is concerned with the preservation of art objects as well as art processes and knowledge inherited from the past, and with promoting the production of the art of the present.

Our art heritage

It is generally recognized that rare objects of cultural value belong

to society as a whole. Private owners of masterpieces of art and rare antiques have long been regarded as trustees of the world's heritage. This concept might be broadened and written into world law to provide that no works adjudged by competent critics to have unique artistic or historical merit could be bought or sold; instead, they should be preserved under the auspices of public museums and institutions, and made available for the study and appreciation of everyone.

Moreover, unique objects, which are really a part of their setting, should not be moved for viewing in distant museums, but kept in their place of origin where their significance and beauty can be fully appreciated. Copies, plastic casts and photographs can always be made use of for museum showing.

The preservation of natural scenic beauty, of architecture and other immovable relics of historic significance, of archaeological resources, as well as plants and animals in danger of extinction, all this can be accomplished only by collective action. Some of these duties are, indeed, recognized governmental responsibilities in many lands.

The positive aim of promoting art should be the encouragement of gifted individuals to develop their talents when young, as noted under *Education.* If society neglects to do this, it can never make good its loss. If the exceptional individual is not provided with some security, he is either driven into commercial work or into another profession and the whole world loses.

Curtailment of the propagation of harmful influences

Aside from the responsibility of promoting what is good, the so-

ciety has the responsibility also of preventing what is bad. Commercial art, or advertising, would appear to be a purely private matter. But since it greatly affects the social environment by propagating whole schools of philosophy and influencing the manners, mores, and attitudes of countless people, society has the responsibility to see to it that no one is harmed by distorted information and exaggeration.

It has been argued that when people are properly educated, they will reject the pressures of the false, the pretentious, and the banal. Nevertheless, as an inescapable component of the environment, certain habit-patterns of thinking are bound to develop from the constant stimulus of advertisement.

Optimum division of cultural responsibility

In general, optimum division of individual and collective responsibility for the cultural environment of the society would be a government guarantee of the minimum, leaving the private individual and institutions free to strive for the maximum.

Where private individuals or institutions already provide the minimum, the government has no responsibility. In a free enterprise economy where the individual is free to amass great fortunes, private support may provide through endowment, and often has provided, a large portion of the minimum desired by the society. In socialist societies, however, the support falls entirely on the government. Therefore, the greater the collective responsibility in economics, the greater the collective responsibility in culture.

What constitutes the minimum, like minimum wage or standard of living, must be decided upon collectively. It is a question of value which varies with the social-economic order. By way of suggestion,

it might include, in addition to institutions for scientific research, museums, zoological and botanical gardens, parks and playgrounds, such projects as non-profit theaters, opera and concert facilities, art exhibits of nation-wide scope, and a broadcasting network for programs of public interest with artistic merit.

CHAPTER XVI

Collective Planning

For the first time in man's long history he can convert the planet into the paradise of which he has dreamed through the ages. What kind of a world do we want? We can have it, limited only by our ability and willingness to produce. We need only team together and agree in advance on what we will *give* for what we will *get*. For all human progress, within the nation or within the world, depends on whether this basic agreement has been reached. Then each one of us, and the whole society, can go forward. Maximum progress is possible only if we work together.

No one knows what that maximum is, but we can get some idea of the possibilities by recalling America's production during the last war, a miracle that astounded the world. Imagine the heights to which all humanity can climb if narrow nationalisms which impede progress are dissolved and all the world's intellectual and material resources pooled, not for war and destruction, but for peace and its benefits, for endless prosperity, health, enlightenment, and human happiness everywhere.

After two world wars there is today no hope, no promise, no future for the individual, only a dark foreboding of an even more dire holocaust to come. How the goal of a better world would inspire, unleashing and mobilizing, the individual potentialities into a supreme effort and achievement!

We shall speak here in terms of economic concepts — standard of

living, actual and potential. Of course, our happiness depends on everything of value, much of which is non-economic and not actually measurable. But it is a fair assumption that the things which are not measurable are correlated with, and run parallel to, the things which are measurable. It is justifiable, therefore, to take the standard of living as an index of the total satisfaction of the individual.

Economic aim of society

For maximum standard of living, we must have planning in addition to agreement every step of the way; planning for maximum utilization of the world's productive capacity. Just as an individual gets maximum satisfaction by planning within the framework of his heredity and environment, so society can have maximum prosperity by planning within its framework of human and natural resources, intellectual and technological.

The ultimate goal of planning is *maximum surplus productive capacity,* which is a measure of the potential standard of living for the average individual. Since labor is the indispensable factor of production, the productive capacity depends on the number of people able and willing to work, other things being equal.

A certain fraction of the population must produce the necessities of life and maintain the social order. The remaining portion of the working population can produce the other things we want, and it is this fraction of the population which represents surplus productive capacity. This surplus can be used for leisure, for current consumption toward a higher standard of living, or for future consumption as "capital."

Let us consider the principles of social budgeting:

1. The amounts of goods and services of the society must correspond to the wants of the members of the society. Collective planning may be democratic or autocratic, but it can be truly rational only when production is based on knowledge of wants, democratically expressed. Only then can the supply exactly equal the demand. Otherwise, the planning may be completely wrong, whether under democratic or autocratic auspices. If autocratic, it may not be based at all on the demands of the people. Therefore, rationality in planning presupposes democratic agreement.

2. Knowledge of individual wants means that the individual must commit himself. He must make up his own mind, and then make his wants known. Society must have accurate advance knowledge in order to plan; and, within the period of time under consideration, the individual wants must remain fixed. This means that the collective budget must be based on the individual budgets of all the members of the society; and these must remain stable for the period covered by the collective budget.

Conditions of equilibrium

The procedures of collective planning would be as follows:

Let every individual prepare his budget for a given period of time, listing what he is equipped, able, and willing to produce as well as the goods and services that he requests in exchange from the society for that same period.

Let these budgets be added up; one side being production, the other distribution. The result of this addition will be a collective budget.

In the budget, the following conditions must be satisfied:

1. Each individual must produce goods or services equivalent in value to those he is to receive in exchange.

2. The total quantity of each kind of goods or services to be produced by all the individuals of the society must be equal to the amount of those to be distributed.

If the first condition is satisfied for every producer, then the second condition can be satisfied through appropriate adjustments. This can be accomplished by bringing the social budget into equilibrium. Since it is largely a question of value, this adjustment can only be made through agreement.

Some day, we may have a machine for constructing a collective budget out of individual budgets. Each person or group can put his budget on a punch card. The card will contain information, not only on the kind and quantity of goods or services desired and offered, but also on the order of preference and the latitude of variation. Putting these cards through sorting machines and electronic computers, it should be possible to arrive at a balanced budget for the society without the need for bargaining or negotiation, provided some general rules are agreed upon beforehand.

Abilities, which will have been evaluated and certified by a competent board, will be punched on the card. Then on that same card, the individual can indicate what he is willing to produce and what he wants to receive in exchange.

Supposing we have a number of jobs to be filled; the cards of a certain category will be run through machines, and the best qualified person will automatically be selected for the job. Thus, the human

resources of the society will be utilized to the best advantage without personal bias, favoritism, or political patronage.

Until such a mechanical system is worked out, we must resort to a round-table conference, and adopt some simplified procedure for planning and arriving at terms of agreement between members of the society for bringing the budget proposals into equilibrium. Here are some suggested ways:

1. Geographical groups of individuals, say, a community or a nation, may be considered as a unit.

2. Occupational groups of individuals may be considered as units. All bus drivers, for example, may be considered together; all grade-school teachers; all barbers; all farmers; and the like. This method would entail dealing with only a few hundred units instead of with over two billion individuals.

Meeting in conference, members of the society or their delegates can agree beforehand upon the quantity and the value of goods and services to be produced in a specific period of time, together with a method for making adjustments.

Having agreed upon a scale of labor value, it remains only for the individual to decide upon the quantity of each kind of goods or service he wants to receive. In exchange, he must produce an equivalent value of goods or service, again according to the scale of labor value. He is free to decide upon the quantity and kind of that which he wants to produce and that which he wants to receive, but the two must be equal in value. With advance knowledge of all the needs of all individuals, then, to establish economic equilibrium, the society has

only to adjust the quantity of each kind of goods or service produced. Suppose, according to all the individual budgets, more farmers and fewer taxi drivers are needed than offered. Obviously, the solution of the problem would be to shift some of the drivers to do farming. This may appear to be an encroachment on individual freedom, but no real freedom is lost in democratic planning. Its final result is the same as that of free enterprise as it is practiced today. In the latter case, the individual adjusts his production according to "the law of supply and demand." Using the above example, farm produce will increase in price and more people will be attracted to farming. If taxicabs are less in demand, then the income of drivers will decrease and some taxi drivers will shift to farming. The adjustment is by trial and error.

In democratic planning, the freedom which the individual appears to lose in the choice of occupation is only the freedom to make a mistake in the absence of knowledge, the mistake of supplying what society does not want. With the knowledge that society needs more food and less transportation, that mistake need not be made and would be avoided by the individual.

In both democratic planning and free enterprise, the individual must do exactly the same thing to supply the wants of the society. The difference is that in the former case, the adjustment is made in advance; in the latter, after the mistake has been made.

CHAPTER XVII

What Blocks The Peace

It is academic to talk about the optimum for the world when we do not have even the minimum. All human achievement comes through cooperation, and for this, the minimum conditions are peace and unity. For peace and unity, the minimum consists of:

1. Limitation of national sovereignty.
2. Complete and universal disarmament.
3. International law with a world government to administer and enforce it.

Although all the peoples of the world want peace, the minimum step has not been taken as nations continue to argue that world peace cannot be achieved, an argument based on traditional rather than scientific thinking. Such arguments have included human frailty, the impracticability of peoples of divergent cultures and economic status to live peacefully together, and the unwieldiness of a world state.

Every civilized community is a living testimony that peace can last as long as law prevails. Human frailty exists within a town, state, and nation as well as within the community of nations, but law successfully restrains it.

That peoples of divergent cultures and economic inequalities can live peacefully together has been demonstrated by the United States of America, a world union in miniature. Like the nations of the world, the fifty states, half as many as the number of nations in the

world, are unequal in size and population. There are the crowded states on the Atlantic Seaboard, the thinly populated states in the West, the agricultural states in the Midwest, the industrial states in the East, the tradition-ridden New England states, the conservative South, the still German-Italian-and Swedish speaking settlements. There are Catholics, Jews, Protestants, Mormons, atheists, all working together peacefully to achieve a living standard higher than that of any other people in the world.

True, frictions exist within the United States as within any society. There are, naturally, divisions and controversies among the segments of its citizenry, notably labor strife and racial discrimination. These differences would have incited wars with the same regularity of European wars were not all individuals within the Union subject to an agreed-upon common system of laws and government, a master agreement (Constitution) which enables the terms of cooperation to be revised from time to time in a peaceful, orderly manner.

This, however, was not always the case. In the beginning, there was much distrust. The larger states wanted to retain their greater power and the smaller states feared loss of their security and identity in a union. All states jealously guarded their sovereignty and independence.

When the thirteen colonies which constituted the Atlantic Seaboard were uniting into a Federation, one argument against the union was that it would be ten times larger than any federation in previous history, too large to be held together by a common government. This was the same argument of unwieldiness, but who sincerely doubts today that the American dream of democracy has become a reality.

The world is now in a position not unlike the United States of America prior to federation. The world union will be many times larger than the United States. Let us see what the world union will be like. It will have enormously greater chances of success than had the United States, in terms of prosperity and progress, because as the area of a unit increases, the choice of the ways of organizing the production for maximum efficiency increases correspondingly. The world union will be self-contained, while the United States is dependent on other nations for certain vital raw materials.

Many countries are currently spending a large portion of their revenues for defense. With the World Union, no defense is necessary against attacks from without, for there will be no "without." These revenues can be spent, instead, for the health, education, and welfare of the people.

Imagine that we abandoned overnight our national fences and the armaments that go with them, and that we integrated the entire world into one logical unit of human society. What would happen? Assuming that all local police and governments remained, the lives of the world's population would be in no way harmed or inconvenienced. Gone forever would be all threats of war, and all of the world's present tensions. Nothing disastrous would occur. Only peace would settle on the world as a blessing. The gigantic obstacle to optimum living would be removed.

One might say that the analogy between the original thirteen states of America and the present world is not quite appropriate in that while the former were confronted with only problems of a less serious nature, the world today is divided by two diametrically opposed political and economic ideologies. Granted such being the case,

we have no cause to despair. Greater difficulties we certainly face than those that accompanied the birth of the United States. But we also have advantages that did not exist before.

For one thing, the two disastrous world wars in this century and the specter of a thermonuclear holocaust have convinced all but a few of the necessity to live in peace. Furthermore, demands of the people in the Communist countries are bound to grow with the passage of time. Such demands, which the Red rulers cannot afford to ignore forever, will certainly bring about internal vital changes in the Communist countries themselves. As a matter of fact, the evolution process has already started in the Soviet Union. Therefore, the task of establishing world peace and order may not be so formidable as it appears.

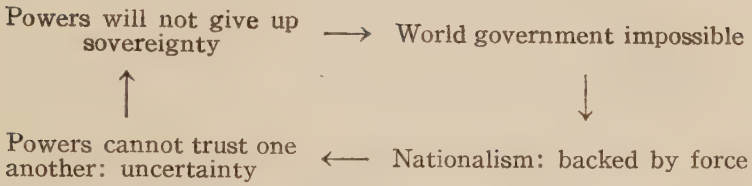
Do we want peace?

How do the nations of the world (as distinct from the peoples of the world) stand on world government?

Some statesmen believe that the nations of the world would not consent to the curtailment of sovereign rights and would not want world government. Why? Because they are afraid of and do not trust one another. They are afraid that they might be tricked or out-voted by nations with a larger population.

But this fear is nothing new; it is not peculiar to the present world. It always exists when smaller units merge to form a larger unit. It existed between the original thirteen states of America. It existed when the German states united. Only it is greater between the nations today, because the inequalities between them are greater.

It is a vicious cycle:


Powers will not give up sovereignty
World government impossible
Powers cannot trust one another: uncertainty
Nationalism: backed by force

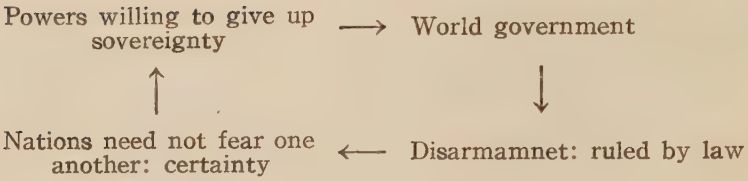
Who will break the war cycle?

To reverse the vicious cycle of the war system into the beneficent cycle of the peace system, the former must be broken at some point. One single inspired action will do it. If broken in only one place, the cycle is completely broken, and the psychological block removed.

Thus, if the world disarms, the war system is dealt a death-blow. "Put down the butcher's knife, and you become a Buddha on the spot," says a Chinese proverb.

If we cannot have a Buddha, or a Messiah, then we must have science. Either can do the job; the result will be the same. Lacking a great spiritual awakening, we can simply face up to the facts scientifically, with all wishful content removed from our thinking. We can take the indicated action without emotion or misgivings. Moreover, science enables us to take this positive, if unprecedented, step without fear or hesitation.

Just as the individual must surrender his freedom to use force, so must the nations surrender their freedom to make war. The world will have, instead of war, the following cycle:


Powers willing to give up sovereignty
World government
Nations need not fear one another: certainty
Disarmamnet: ruled by law

How different a world we would have today if at the conclusion of World War II the Big Powers, instead of appropriating to themselves the prerogative of making the peace, could have said at the United Nations Assembly:

"Gentlemen, by the combined efforts of the United Nations, the proponents of force, the Axis powers, have been defeated. We will now construct a new world, enacted democratically, to be ruled by law, not by force. We will accept the collective judgment of the whole family of nations, of all the peoples of the world, as to what is right and just."

What would have been the reaction of the world to such a gesture of the Big Powers? A new spirit would have been created, making all international problems easy to solve.

Had the Big Five who drafted the Charter regarded the United Nations as the final authority, would smaller nations have dared to defy it? The Big Five have failed to take the responsibility which destiny placed upon them for leading the world to peace. They have failed to win the respect and confidence of the world.

Today, that responsibility for peace or war still rests squarely on the big powers. They can generate fear or create trust by doing one of two things:

1. Continue the political chess-game, knowing well that sooner or later the world will be embroiled in another war.

2. Make a concrete plan for world government and complete disarmament.

If a plan for world government were to be accepted by all the nations, it must be based on a new code of world peace and order. Those who may dissent would not be able to stand up against the moral judgment of the world. There is a good chance that they will join out of self-interest and realization of the futility of isolation. World peace could then be achieved.

CHAPTER EIGHTEEN
Building a Better World

In establishing a world government, we would have to agree first on a method for reaching an agreement, then the kind of a world we want can be decided upon. However, if the kind of a world we want has been decided upon first, then it would automatically include, as one of its features, a method for reaching an agreement for united action in the face of differences of opinion.

If it has been decided that world-wide human society is to be democratic, then it follows that all questions confronting society would be decided by a majority vote of qualified voters. If a World Assembly already exists, then it would decide on the kind of a world that we want. To answer the two questions, the kind of a world we want and a method for reaching an agreement, some agency must first make a decision to start the peace system rolling.

It would seem that the United Nations is the most appropriate organization to undertake this task.

Call a world congress

The first step in establishing a world government is the calling of a World Congress to convert the United Nations into a real government, by investing it with sufficient authority to fulfill its function. This Congress can be called under the United Nations Charter by a two-thirds vote. Such action is not subject to the veto.

This Congress may be composed of representatives of peoples or

of governments. It will have to make a number of specific decisions: in politics, degree of democracy; in economics, degree of collectivization and benefit differential; in health, freedom of reproduction versus population control; and the like. Convened for the specific purpose of deciding on the kind of a world we want to build, it will be dissolved when its work is done.

It is true that any one of the five permanent members of the United Nations Security Council may block any revision of the UN Charter; but the first and most important step towards the building up of a world government will be the creation of a strong world opinion in favour of a certain new world order. The desire to live in peace and freedom already exists in the heart of most people. This desire must be made much more articulate than it has been hitherto. It should be given a solemn expression at a world forum. If a world consensus of opinion on the kind of world we want to live in is created and solemnly expressed, it will gradually become an irresistible force.

The kind of a world we want

Then what kind of a world *do* we want? Do we know? It may be said that this has been declared in the Atlantic Charter, in the United Nations Charter, and similar documents. But these declarations are all in general terms: peace, justice, democracy, equality, freedom. They are insufficient as specifications for the planners of the peace to follow, and must be defined before we can proceed.

Democracy. It is not sufficient to say, in defining democracy, that the final authority of government rests with the people. Which of the people? With or without qualifications regarding sex, age, health, wealth, education, ability? The exact degree and conditions of demo-

cracy must be defined.

Equality. Equality of all persons before the law cannot be argued. However, there cannot be equality of individuals' contribution and recompense, since men are not born with equal abilities. At the national level, equality takes on the appearance of artificiality. The present equal voting strength of nations in the United Nations General Assembly is patently unjust. "Sovereign equality" can have meaning in judicial matters before the World Court, but in matters which require international cooperation, it cannot be maintained that a country with a population of a few millions should have the same number of votes as one with a hundred millions. There are other measures of equality, including such factors as industrial and agricultural productivity, cultural accomplishments, wealth and health. An equitable distribution of votes on the realistic basis of productive capacity and educational qualifications could certainly be negotiated. Here, "balance of power" would be shifted from "jungle law" to qualitative human and productive resources. On such a sensible and equitable basis, the voting strength of the more progressive countries would not be outstripped by the less developed countries.

Whatever the decision made, since the individual is directly responsible to the World State, representation on the basis of individuals would be more in accord with world democracy than on the basis of nations.

Freedom. Where freedom begins and security ends is entirely a matter of choice and must be agreed upon. It is easy to subscribe to "respect for human rights and for the fundamental freedoms" but these freedoms as well as rights are simply terms of agreement and they must therefore be specified.

When the World Congress has defined the above terms, the kind of a world we want will have been described. Behind the definitions there will be a scale of value applicable to the world-wide society as a whole.

Programs for world reconstruction

Having reached a decision on the kind of a world we want to build, the planning of a program for world reconstruction will be a comparatively simple task. It should be entrusted to a planning commission of technical experts in all fields: law, economics, sociology, psychology, education, medicine, engineering, agriculture, mining, chemistry, physics, and the like.

The best way to achieve each of the objectives laid down by the World Congress will be to base the decision on *fact*. Where the facts are not yet known and judgment must be temporarily resorted to, these same experts, rather than politicians, diplomats, or the general public, are best qualified to judge. To them the planning of a World Reconstruction Program must be entrusted in its entirety.

While we cannot anticipate the contents of such a program, certain principles may be suggested:

1. *Reconstruction will require decades.* The world cannot change overnight from its present chaos to the rational order planned and designed according to our wishes. A period of transition is necessary.

The transition time required cannot be foreseen. If made too short, reconstruction will be too hasty and the chance of failure will be increased. If too extended, the peace builders' enthusiasm will slacken, leading to danger of indefinite postponement of the needed reconstruc-

tion. Thirty years, divided into six five-year periods, would seem like a desirable duration because it would be long enough to effect social and economic changes from one system to another. It would also permit the peace-worker of the present generation to see the consummation of the program in his lifetime.

World reconstruction should also include the building of a world capital. If we really mean business, the home of the world government should befit its function. It should occupy a territory of a size comparable to Washington, D. C.. The world capital should be physically inspiring, with delightful climate and beautiful surroundings, and be easily accessible from all parts of the world.

2. *Reconstruction will proceed in a certain order.* The political, economic, health and cultural aspects of society are so interrelated that no change can be made in any one aspect without eventually changing all the other aspects. Nevertheless, some changes can be effected in one or two years, while others will take decades or generations. A world government, for instance, can be established in one or two years. A universal health service for all, on the other hand, cannot be completed until the requisite number of doctors are trained, an undertaking requiring many years. A universal currency can be introduced without protracted preparation, while a minimum of high school education for all must await the training of teachers. A universal language can be constructed and its teaching introduced into the primary schools within a few years, although it will be generations before its use becomes universal in the press and the radio of the world.

Whatever the order of execution, political reconstruction should come first. With a firm political foundation, economic reconstruction

can proceed without delay. Health and cultural reconstruction will follow as the fruits of whole-hearted economic cooperation raise the productivity of the world to new heights.

3. *The present is not to be unduly sacrificed for the future.* No matter how high may be the final goal of world reconstruction, we must begin with the present. No program can succeed if it calls for undue sacrifice of the present generation for a future one, or of certain groups for the whole society. These people will naturally resist such reconstruction with all the power they possess.

Any necessary social and economic readjustments should be effected gradually, democratically, in a way that is just and humane. Let democracy be achieved by the gradual widening of franchise as the educational level is raised throughout the world. Let means of production be socialized as social consciousness rises sufficiently to counteract the lack of material incentive. Let social security be broadened as increased harmony and efficiency raise the standard of living throughout the world to ever higher levels. This is the way in which world reconstruction must proceed.

APPENDIX I

Goals and Actions

ITEMS OF LIVING		GOALS	ACTIONS
Care of oneself	1. Health	Feeling of well-being	Develop and maintain a sound body
	2. Learning (enlightenment)	Knowledge and understanding	Develop and maintain a sound mind
	3. Peace of mind	Feeling of contentment and security	Maintain good conscience and mental outlook; cultivate virtue
	4. Aesthetics	Pleasure of the senses	Develop capacity to appreciate and to enjoy
Inter-relations	5. Work (a) Production	Achievement — Feeling of excellence, pride, and honor	Do the best possible, especially in creative work
	(b) Exchange (goods and services)	Comfort and variety in daily living	Develop all possible skills and resources
	6. Marital love	Satisfaction of the sexual urge	Courtship and marriage
Care of environment	7. (a) Family (relations)	Harmony and procreation	Take good care of family
	(b) Home (economics)	Comfort and convenience	Take good care of home and belongings
	8. (a) Community (human relations in general)	Cooperation — peace and order	Cultivate harmonious relations
	(b) Neighborhood and world	Healthy environment	Support the government through exercise of rights and fulfilment of duties of citizen
Incidental	9. Travel and communication	Relaxation and broadening of experience	Careful study and planning

APPENDIX II

Items of living, spelled out in detail or in outline form.

I. **Health** (a primary goal): To develop and maintain a sound body and mind is a primary action which can be carried out by the following secondary actions:

I-1. Take sufficient quantity of nourishment to meet the requirements of the body.

I-2. Keep the body clean and orderly.

I-3. Protect the body with clothing and shelter.

I-4. Prevent and cure diseases.

I-5. Rest and sleep regularly.

I-6. Vary the activities of the body and the mind.

How to carry out each of the above secondary actions? The answer is a list of things to do which may be called tertiary actions. Under nourishment (I-1), for instance, may be listed the following:

I-1-1. Take sufficient amount of a balanced diet.

I-1-2. Drink sufficient amount of water.

I-1-3. Cook the food to sterilize it, and to improve palatability and digestibility.

I-1-4. Masticate well to help digestion.

Some of the above tertiary actions are terminal or immediate. Food should be masticated before swallowing and that is all there is to the item I-1-4, which therefore requires no further analysis.

How to carry out each of the tertiary actions? The answer is again a list of things to do which may be called quaternary actions.

Under a balanced diet (I–1–1), for instance, may be listed the following:

I–1–1–1. Take sufficient amount of protein, fat and carbohydrate to satisfy the total caloric requirement.

I–1–1–2. Take sufficient amount of protein of high quality to furnish all the essential amino acids.

I–1–1–3. Take sufficient amount of the right kind of fat to provide all the essential fatty acids.

I–1–1–4. Take sufficient amount of each of the vitamins.

I–1–1–5. Take sufficient amount of each of the essential mineral elements.

Some of the quaternary actions are terminal or immediate. It is a simple matter to calculate the caloric value of a diet with the aid of a food table, the item I–1–1–1 is thus terminal. However, some other items under balanced diet may require further inquiry and analysis. To each question: "How to do it?" the answer is again a list of things to do.

Continuing this *process of analysis,* the question "How to live?" is eventually broken down into a list of terminal actions, a list of things to do in every day living which calls for no further explanation or inquiry.

Other items of living are given below in outline form. No attempt is made for completeness. Detailed analysis of any item may be best worked out by the reader by consulting II–2.

II. **Study and learning**

II–1. What to learn?

II–1–1. Basic knowledge.

II–1–1–1. Tools: Languages and mathematics.

II–1–1–2. Orientation: Astronomy, geography, biology, chemistry, physics, sociology, economics, government, history, etc.

II–1–1–3. Civics, ethics, etc.

II–1–2. Professional knowledge.

II–1–3. Aesthetic knowledge: Music, fine arts, literature.

II–1–4. Athletic knowledge: Swimming, riding, etc.

II–2. How to study and learn?

II–2–1. Learn the facts from:

II–2–1–1. Other persons who know more; advice, lectures, educational radio and television programs.

II–2–1–2. Books, newspapers, magazines.

II–2–1–3. Observation of natural phenomena in daily living.

II–2–1–4. Thinking and writing.

II–2–1–5. Research and experimentation.

II–2–2. Examine and evaluate the acquired knowledge critically for reliability, accuracy, and consistency.

II–2–3. Organize the knowledge into a logical system of one's own, by careful reasoning and clarification of one's own mind.

II–2–4. Put knowledge into practice: Make use of acquired knowledge.

III. **Peace of mind**

Peace of mind is the result of doing the right thing in every item of living, especially in:

III–1. Harmonious human relations.

III–2. Conscientious work.

III–3. Confidence in one's health, performance and financial security.

III–4. Understanding of one's position in its relation to the rest of the world.

III–5. Faith in the unknowable: Worship, meditation and prayer.

IV. **Aesthetics**

IV–1. Sight: Form and color.

IV–2. Hearing: Music, speech, natural sounds such as waterfalls and the singing of birds.

IV–3. Taste: Foods and drinks.

IV–4. Smell: Fragrance of foods, perfumes, plants, and flowers.

IV–5. Touch: Softness and warmth.

IV–6. Movement: dancing, walking, and skating.

IV–7. Expression: creative art, and literature.

V. **Work**

V–1. Choose a profession according to aptitude and inclination.

V–2. Be well acquainted with the necessary skills or knowledge.

V–3. Aim at the highest standard of accomplishment.

V–4. Strive constantly for improvement.

V–5. Be on the alert for opportunities of invention and discovery.

VI. **Love:** Marital and familial

VI–1. Courtship.

VI–2. Marriage.

VI–3. Parenthood.

VI–4. Child care.

VI–5. Care of Parents

VII. **Congenial human relations**

VII–1. Relatives.

VII–2. Friends.

VII–3. Neighbors.

VII–4. Fellow citizens.

VII–5. Fellow human beings.

VIII. **Peace and cooperation in communal living**

VIII–1. Neighborhood.
VIII–2. Town or city.
VIII–3. State or province.
VIII–4. Nation.
VIII–5. World.

APPENDIX III

Evolution of Ways of Living

Primitive man foraged for food much in the same way wild animals do. Animal food was obtained by hunting and fishing. Vegetable food obtained by simply "gathering" was limited to berries, fruits, leaves and roots. His food supply was uncertain and his life precarious. With planting instead of only gathering and with animal husbandry following domestication of animals, the supply of both vegetable and animal foods became secure. Since he did not have to wander in search of food, he could settle in one place.

Primitive man lived in the caves provided by nature. The first man-made dwellings were huts built with bamboo, reed, wattle, or wood, covered with a turf or thatch roof. These huts were fragile. Later on, stone and brick came into use which made the dwellings more durable. In our own era steel and concrete have not only added to the durability of buildings but made possible the construction of huge sky-scrapers.

Primitive man wore the skin of animals, feathers of birds, or leaves of plants. With the invention of weaving, cotton, flax, silk and wool clothing came into use. In recent years synthetic fibers with great durability and insulating qualities are used more and more as materials for clothing.

Methods of production of food, clothing, and shelter — the basic necessities of life — depend on tools which in turn depend on the way of harnessing nature's energy to man's needs. Primitive man had

only man's muscular energy at his disposal. With the domestication of animals, the muscular energy of animals became available. In some areas, the energy of wind was utilized while in others, the energy of waterfall was harnessed. Since the discovery of fire, the energy released by combustion of wood, coal, oil, and petroleum has become the most important source. All the machinery in the world up to the end of World War II was run by energy released from these fuels.

The above mentioned sources of energy are all derived, directly or indirectly, from the sun. An entirely different source of energy — nuclear energy — became available with the discoveries of the fission of uranium 235 and the fusion of deuterium. These discoveries open up possibilities of technological progress and benefits to mankind undreamed of before.

Primitive man believed that disease was caused by demons and the way to cure disease was to appease or chase away the demon. The "medicine-man" was a magician and a priest. What a long way the basis of medical practice has traveled from mere superstition to the factual knowledge of biological sciences. With the discovery of anesthesia and antiseptic technique, surgery was made safe for the first time. A diseased tissue or organ can now be removed or even replaced with a healthy one. Numerous sera or vaccines have been developed which can immunize the body against diseases such as diphtheria, whooping cough, tetanus, polio, and typhoid fever. Medicine has advanced not only from the curative to the preventive, but even a step further — to the building of positive health. We now aim not only at the eradication of disease, but also at abundant, positive health by hygienic living from infancy to old age.

The impact of technology on the ways of living is nowhere more

spectacular than in the fields of transportation and communication. Before the invention of the wheel, primitive man carried loads on the ends of a pole placed over the shoulder and people were carried in palanquins or sedan-chairs. With the domestication of animals, donkeys, mules and horses were used as pack-animals. The invention of the wheel brought pushcarts, chariots, carriages and stagecoaches. Then came the railway car, making use of the steam engine. Finally, with the invention of internal combustion engines came not only the automobile, but also the aeroplane and, for the first time, air travel became possible. At the present time aeronautics is progressing rapidly and, with the invention of rockets, interplanetary travel is not far away.

Primitive man used dugouts, bark canoes, reed boats and skin-floats for transportation on water. Side by side with advances in land transportation, water navigation has advanced as human muscle is replaced by wind power, the steam engine and the internal combustion engine. Submarines driven by nuclear power are already a reality, and the nuclear-powered commercial fleet is on the way.

In ancient days an urgent message was carried by a runner, a horse rider or a pigeon. The discovery of electricity brought telegraph and telephone while the discovery of the electromagnetic wave brought wireless telegraph, radio and television.

In Medieval Europe, as in other parts of the world, industry was in the hands of artisans. The skill was transmitted from father to son and production was limited in scale. With the advent of the machine age, goods are produced on a large scale in huge factories where thousands of workers might be employed. With mass production, the raw materials available in one country may not be sufficient

and have to be imported while the goods produced in another country are more than sufficient for local consumption and have to be exported.

The foregoing examples represent some of the important changes brought about by the evolution of ways of living.

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